

EPA Region 5 Records Ctr.



208130

SITE ASSESSMENT REPORT
FOR
ENTERPRISE OIL
DETROIT, WAYNE COUNTY, MICHIGAN

November 19, 1991

Prepared For:
Mr. Duane Heaton
Deputy Project Officer
Emergency Support Section
U. S. EPA Region V

Contract No.: 68-WO-0037

Prepared By:	<u>William P. Wilder</u>	Date:	<u>11-19-91</u>
Reviewed By:	<u>D. Tustin</u>	Date:	<u>11-19-91</u>
Approved By:	<u>J. Shields</u>	Date:	<u>11-19-91</u>



ecology and environment, inc.

12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL. (313) 946-0900
International Specialists in the Environment

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1.0 INTRODUCTION

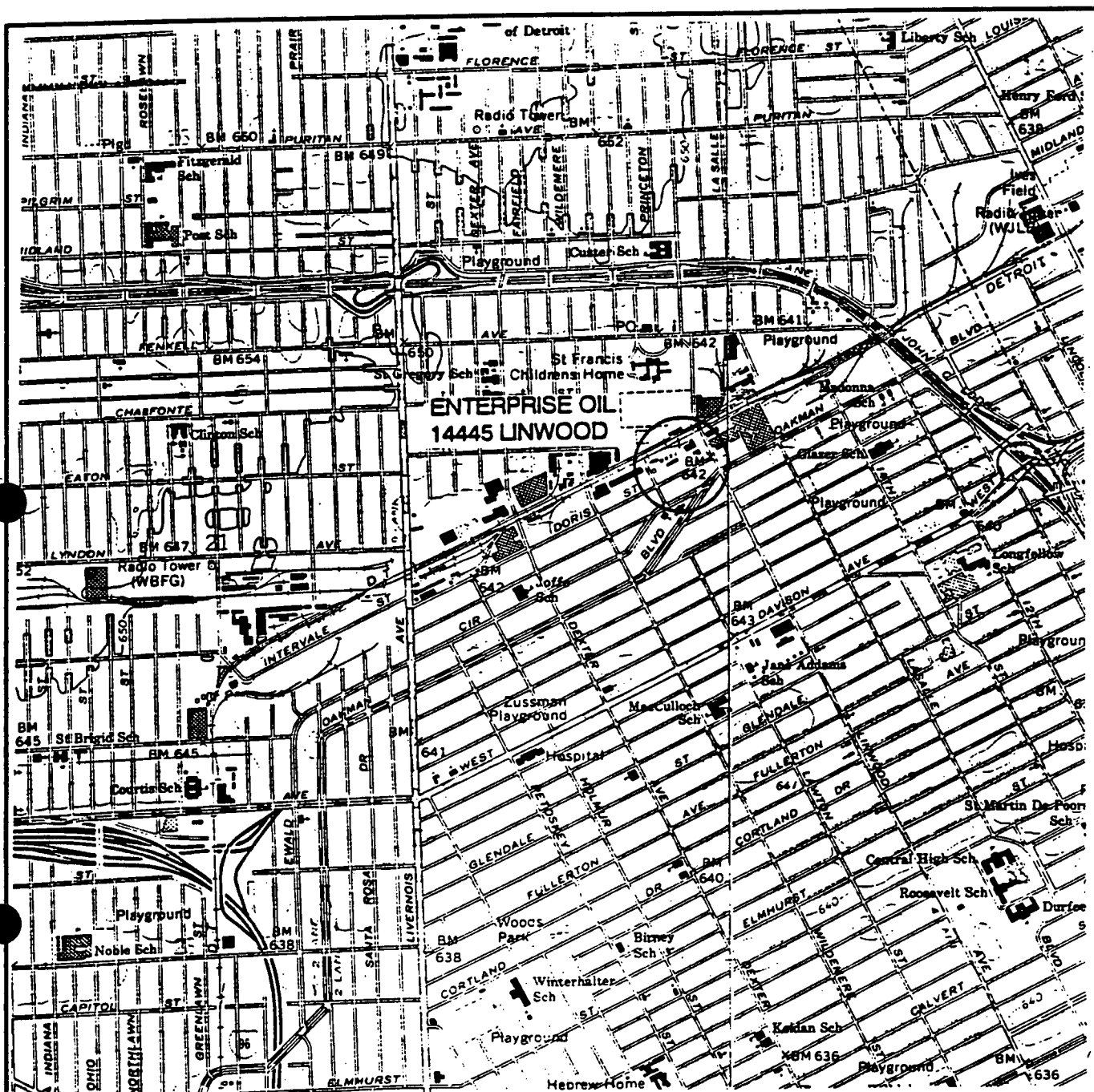
The Ecology and Environment, Inc. (E & E) Technical Assistance Team (TAT) was tasked by the United States Environmental Protection Agency (U. S. EPA) to conduct a site assessment at the Enterprise Oil site in Detroit, Wayne County, Michigan. The TAT conducted activities under Technical Directive Document (TDD) number T05-9108-017, issued on August 22, 1991. The site assessment was performed in accordance with the National Contingency Plan (NCP), Paragraph (b)(2) of 40 Code of Federal Regulations (CFR) Section 300.415 to evaluate on-site conditions and possible threats to human health and the environment.

2.0 SITE BACKGROUND

2.1 Site Description

The Enterprise Oil site, which is approximately three acres in size, was formerly an oil storage terminal and distribution center for gasoline, kerosene, and home fuel oil. Enterprise Oil is located at 14445 Linwood Avenue (northwest of the I-96 and I-94 interchange) in Detroit, Wayne County, Michigan (Figure 1). The site is bordered by Conrail Railroad tracks on the north, by Linwood Avenue on the east, and by Lawton Street on the west. Small industries are located across Linwood Avenue and Lawton Street from the site. A chainlink fence surrounds the site and separates the south side of the site from residential homes on Doris Street.

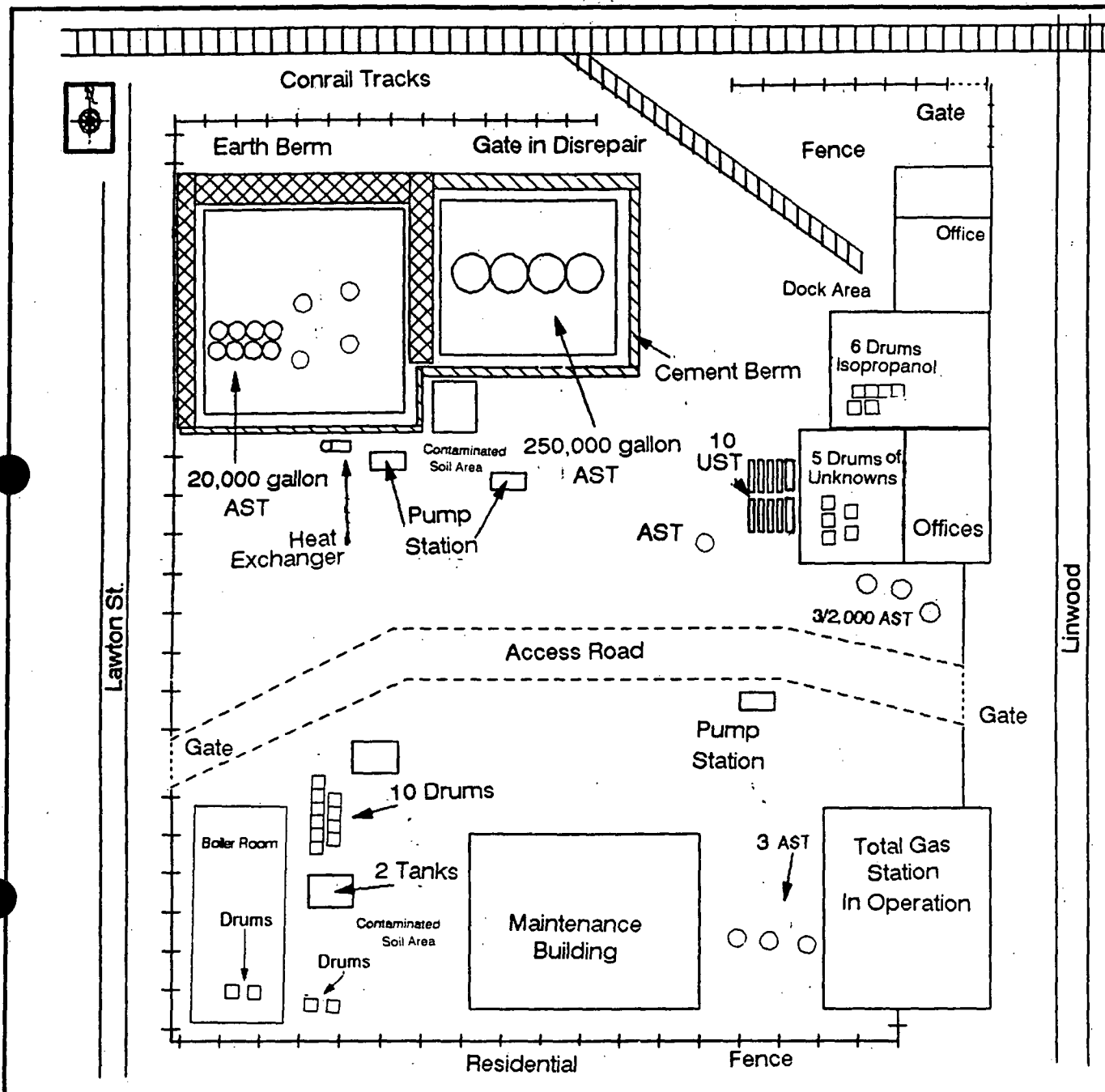
The site consists of several buildings and structures that are abandoned and have been vandalized (Figure 2). These structures include an office building with loading dock, a maintenance garage and laboratory, and another garage housing a boiler. There are sixteen above-ground-storage tanks (ASTs) composed of four 250,000-gallon ASTs and twelve 20,000-gallon ASTs. These ASTs have secondary containment. There are





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Technical Assistance Team
Region V

TITLE	Site Location Map	FIGURE #	1
SITE	Enterprise Oil	SCALE	Not to Scale
CITY	Detroit,	STATE	Michigan
SOURCE/DATE	E & E 9/6/91	TDD #	TO5-9108-017



		 ecology and environment, inc. Technical Assistance Team Region V	
SOURCE/DATE		TITLE	
E & E 9/6/91		Site Map	
CITY		FIGURE #	
Detroit,		2	
STATE		SCALE	
Michigan		Not to Scale	
TOD #		TO5-9108-017	

also ten underground-storage tanks (USTs), three 3,000 to 4,000 gallon abandoned tanker trucks, five 20,000-gallon ASTs without secondary containment, and three ASTs (located near the main gate) with estimated capacity of 2,000 gallons also without secondary containment. Miscellaneous debris is scattered throughout the site.

2.2 Site History

Records found on site indicate that the facility began operation in 1943. The site, now known as Enterprise Oil, operated under several other names during its history. According to Robert Citrin, one of the previous owners, Enterprise Oil operated as a storage and distribution center for gasoline, kerosene, and home fuel oil from 1956 to 1968. The facility was not operating at full capacity and the site was for sale from 1968 to 1976. Enterprise Oil purchased the facility from J. A. Citrin and Sons in 1976. Operation of the facility as a waste oil storage terminal recommenced at this time. In 1987, D & W Oil purchased the facility from Enterprise Oil and remained in operation through December 1988. A private party purchased the site from D & W Oil in 1988. In 1989, the party sold his share to MORECO Energy, which is the current owner of the site.

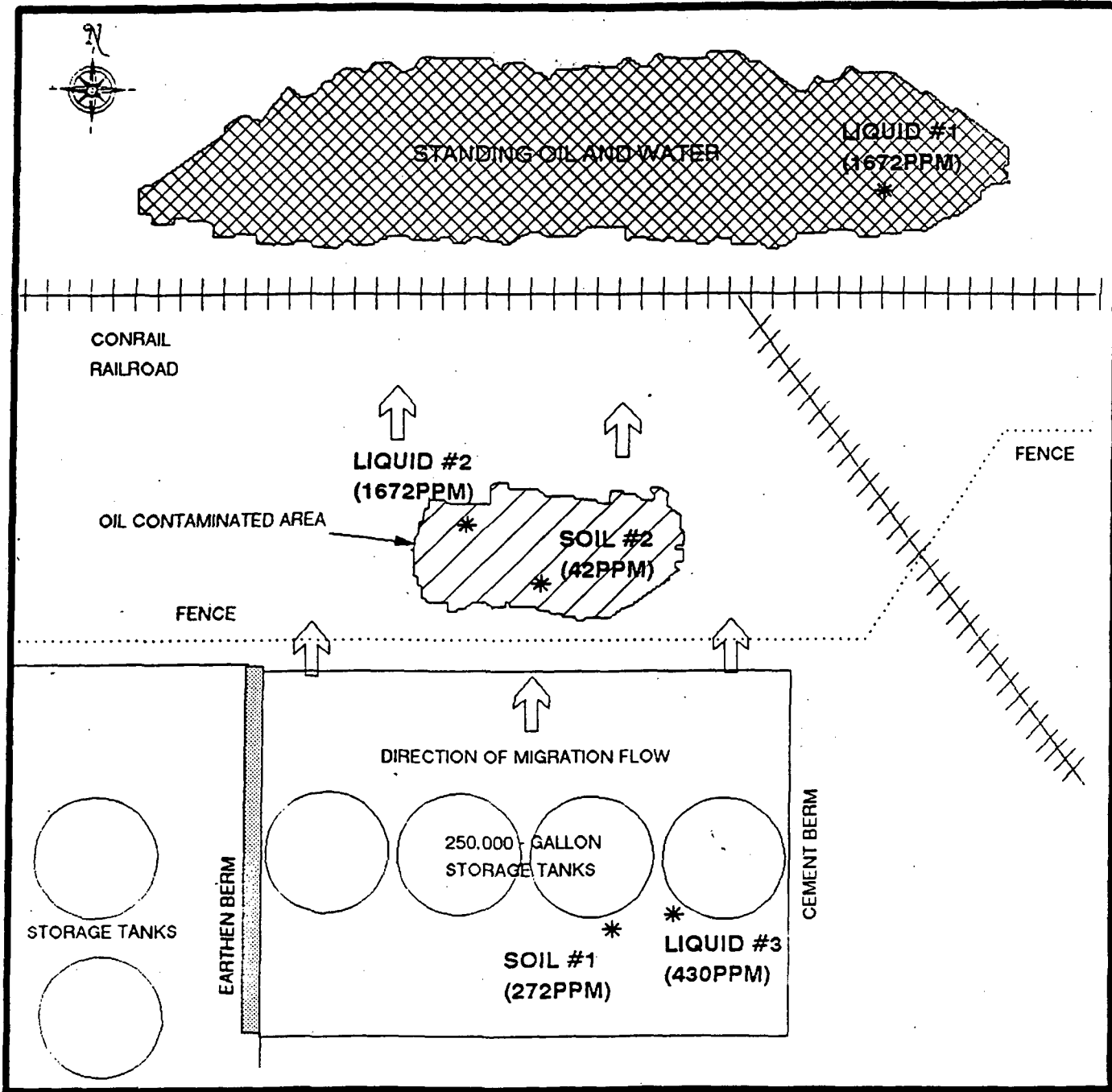
Since 1990, two documented spills have occurred on site. In April 1990, approximately 200 gallons of oil were released on site and reported to the Michigan Department of Natural Resources (MDNR) (Appendix A, MDNR Spill Report). In July 1991, a second spill occurred when vandals reportedly removed brass valves from tanks resulting in a release of waste oils and possibly solvents. This release reportedly migrated off site. According to additional reports, after this incident, approximately 45,000 gallons of waste oil were pumped from the 250,000-gallon tank secondary containment area by M. L. Ashbury, Inc., a contractor to the site owner, MORECO Energy. M. L. Ashbury, Inc. shipped the waste oil to a local oil recycling facility.

3.0 SITE ACTIVITIES

The TAT conducted a site assessment at Enterprise Oil beginning on September 6, 1991 and continuing through September 18, 1991 (Appendix B, Annotated Photographs 1-24). Upon arriving at the site on September 6, 1991, the TAT observed no locks on the east, west, and north gates. The site was not secured and could be easily accessed. The four 250,000-gallon storage tanks had secondary containment structure consisting of cement wall dikes and an earthen floor. The twelve 20,000-gallon storage tanks had secondary containment consisting of an earthen berm and an earthen floor. Three concrete walls and an earthen berm divided the 250,000-gallon secondary containment area from the 20,000-gallon secondary containment area.

Several large tanks and tanker trucks with capacities of 20,000-gallon and 3,000- to 4,000-gallons respectively were scattered throughout the site. The office building was partially collapsed, and debris was present over much of the site. Pooled oil, stains, and puddles were visible in the 250,000-gallon secondary containment area and in areas where oil from the July 1991 release had migrated off-site. The release appeared to have migrated off-site through the earthen floor. The point of migration was evident by stained soil and pooled oil on the north side of the cement wall of the 250,000-gallon secondary containment area. The release apparently migrated under the Conrail Railroad tracks ballast and deposited in a ditch to the north of the Conrail tracks. The oil visibly contaminated the soil in a total area of approximately 400 feet by 60 feet (Figure 3).

On September 6, 1991, the TAT met with Paul T. Max, Senior Assistant Sanitary Engineer for the City of Detroit regarding the site and sewer locations. The TAT investigated water and sewer locations and site surface topography. TAT also investigated nearby commercial and residential areas that may have been impacted by off-site migration of contaminants. The TAT found no further migration in these areas. The



LEGEND

() - SAMPLE CONCENTRATIONS OF AROCHLOR 1242 AS DETERMINED BY U.S. EPA TAT FIELD SCREENING IN PARTS PER MILLION



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Region V

SOURCE/DATE E & E, INC.\10-22-91	TITLE SAMPLING AND SCREENING FOR PCB's MAP		FIGURE # 3
	SITE ENTERPRISE OIL		SCALE NONE
	CITY DETROIT,	STATE MICHIGAN	TDD # T05-9108-017

TAT collected three liquid oil samples and two soil samples. Using the McGraw-Edison Field Test Kit for Oil and Soil, the TAT analyzed the samples on-site for polychlorinated biphenyls (PCBs). The field results ranged from 42 parts per million (ppm) to 1,672 ppm for arochlor 1242 (Figure 3).

On September 9, 1991, the TAT met U. S. EPA On-Scene Coordinators (OSCs) Robert Bowlus and Peter Guria at the facility to investigate a reported oil spill. Among other items investigated were ASTs, site structures, old facility records, unlabeled drums, drums labeled "isopropanol 99", and a drum labeled "hazardous waste". Exposed and partially buried drums containing miscellaneous debris, metal scrap and unidentifiable contents were in various stages of deterioration and were scattered throughout the site. The OSCs directed the TAT to collect four samples of soil and oil from in and around the 250,000-gallon tank containment area. These samples were obtained to confirm by outside analysis the field test results for PCBs. The results from Thermo Analytical Laboratories, Inc. of Ann Arbor, Michigan ranged from less than 5 ppm to less than 10 ppm for Arochlor 1016, 1221, 1242, 1248, and 1260 (Appendix C, QA/QC Data Package).

On September 11, 1991, the TAT collected five drum samples, two on-site soil samples, and one solid sample of potential asbestos-containing material (Appendix D, Sample Plan). During this sampling activity, air monitoring was conducted using an oxygen meter/explosimeter, organic vapor analyzer (OVA), and photoionization detector (HNU). The breathing zone and the head space of the drums were monitored. HNU results ranged from 1 ppm to 3 ppm in drum D003 to 440 ppm in drum D001 (Appendix E, Table 1). No other readings above background were observed.

On September 18, 1991, the TAT returned to the Enterprise Oil site to meet with OSC Guria; a representative from Motor Oils Refining Company (MORECO), the Potentially Responsible Party (PRP); and their contractor hired for the site remediation. The MORECO representative informed OSC Guria that a work plan for the on-site remediation would be completed. The 250,000-gallon tanks would have to be removed before remediating the

on-site subsurface soil in the containment area. OSC Guria also stated that all cleanup operations and additional remediation including excavation of off-site soils needed to be addressed in the MORECO work plan.

4.0 ANALYTICAL RESULTS

On September 9, 1991, the TAT collected three oil samples and one soil sample from the 250,000-gallon tank containment area and the area along the Conrail Railroad tracks. Laboratory procurement was authorized under TDD number T05-9109-806 to analyze the samples for PCBs. Analytical data for sample results above background is reported in Appendix E. The five drum samples, two soil samples, and one solid material sample collected by the TAT on September 11, 1991 were analyzed under the same TDD for the following parameters: flash point, volatiles/semivolatiles, pesticides/herbicides, base neutral acids (BNAs), priority pollutant metals, and asbestos.

Analytical results for sample S-81 indicated a flash point of 70° to 75° Fahrenheit (°F). Sample S-78 contained ethylbenzene at a concentration of 2,200 ppm. Sample S-78 also contained naphthalene at 2,700 ppm and 2-methylnaphthalene at 1,800 ppm. Samples S-82, S-83, and S-84 had total zinc concentrations of 200 ppm, 190 ppm, and 220 ppm respectively. Total organic halide results for all samples ranged from 2,800 ppm to 5,200 ppm and total chlorine results ranged from 1,800 ppm to 6,900 ppm. Additional analytical data indicating parameters above detection limits has been summarized in Appendix E - Table 2, Total Organic Halides and Total Chlorine; Table 3, Volatiles; Table 4, Semivolatiles; Table 5, Metals 13 CPDs; and Table 6, Herbicides. The data quality assurance review, a copy of the analytical data package, and chain-of-custody are found in Appendix C.

5.0 DISCUSSION OF POTENTIAL THREATS

The site assessment at Enterprise Oil was conducted to evaluate the threat to public health and the environment posed by the potential for imminent release of hazardous substances from the site. Investigations made by the TAT and the OSC confirmed that a release had occurred and migration of that release posed both imminent and severe public health threats. The proximity of eight schools and playgrounds within eight blocks of the site, residential homes on Doris Street, and a shopping area in the direction of the water flow, as interpreted from a U. S. Geological Survey topographic map, caused immediate concern regarding the threat to public health.

The NCP provides specific criteria for evaluation of a threat in Section 300.415, Paragraph (b)(2), Subsection (i) through (viii). Observations documented during the site investigation apply to Subsections (iii) through (vi) and are listed as follows:

- (iii) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

Drums, tanks, and containers containing labeled and suspected hazardous waste are present at various locations throughout the site. The photographs also document drums and tanks in various stages of decay. The public is at risk due to the unsecured status of the site. As a past MDNR report substantiates (Appendix A), vandals entered the site, removed several brass valves, and released an unknown quantity of waste oil. Additional evidence that the site is not secure is found in the site's annotated photographs (Appendix B). The photographs document that no locks are present on the gates, and the building and equipment appear vandalized and are in disrepair. Evidence was found indicating the site is used as living quarters for vagrants.

According to the analytical results, the Naphthalene concentration is at

2,700 ppm. The NIOSH Pocket Guide to Hazard Chemicals reports Naphthalene as an immediate danger to life and health at 500 ppm.

- (iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;

Off-site migration of the spilled oil to a ditch on the north side of the Conrail right-of-way was observed. There are open city sewers on Linwood, Lawton, and Doris Streets, as well as three storm sewers located in the east, middle, and west areas of the site. City of Detroit officials have indicated that the sewer water flow is primarily to the south. With total organic halide levels as high as 5,200 ppm, total zinc concentrations as high as 220 ppm (Appendix C, Tables 3 and 6), and migration pathways clearly noted, high levels of hazardous substances may migrate off site through the sewer system.

- (v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

Extremes in weather conditions such as a heavy rainfall may cause the oil in the railroad bar ditch to migrate further off-site via drainage tile located beneath the railroad bed ballast. These drain tiles lead to storm sewers which ultimately flow into navigable waters of the Detroit River.

- (vi) Threat of fire or explosion;

Potential fire or explosion hazards exist because of the presence of drums containing "isopropanol 99" and waste oil. Isopropanol exhibits the Resource Conservation and Recovery Act (RCRA) (40 CFR 261.21) characteristic of ignitability (flash point $< 70^{\circ}\text{F}$). There are over 20,000 gallons of waste oil on site containing a high concentration of total chlorine (Appendix E, Table 2). A fire, if ignited, could be maintained and chlorine gas could possibly be emitted. There are also high concentrations of volatiles and semivolatiles found on site that if

ignited, pose a threat (Appendix E, Tables 3 and 4).

6.0 SUMMARY

In summary, problems include: the potential threat of fire or explosion with known substances on-site; the continued migration of spilled waste oil; and the presence of hazardous substances in various types of containers (e.g., drums, tanker, UST, and AST) that could be released into the environment. In addition, the Enterprise Oil site is not secured. The fence has been vandalized or removed in many locations. Damage such as broken windows and other physical destruction of the office and laboratory buildings is documented. There are also indications of transients inhabiting the site. Further activity should include securing the site, eliminating any source of fire or explosion, and eliminating off-site waste oil migration. Due to the unknown extent of soil contamination, additional impact studies may be required.

Observations documented during the site assessment indicate that the conditions at Enterprise Oil constitute an imminent and substantial endangerment to public health and welfare. This conclusion is based upon observations by the OSC and the TAT, as well as investigative reports from state and city officials as evaluated against the criteria set forth in the NCP.

APPENDIX A

MICHIGAN DEPARTMENT OF NATURAL RESOURCES SPILL REPORTS

STATE OF MICHIGAN



NATURAL RESOURCES COMMISSION
THOMAS J. ANDERSON
MARLENE J. FLUMARTY
JORDON E. GUYER
KERRY KAMMER
ELWOOD A. MATTSON
STEWART MYERS
RAYMOND POUPORE

DEPARTMENT OF NATURAL RESOURCES

Del Rector, Director

SOUTHEAST MICHIGAN DISTRICT HEADQUARTERS
ENVIRONMENTAL RESPONSE DIVISION
38980 Seven Mile Road
Livonia, Michigan 48152

July 30, 1991

JOHN ENGLER
Governor

Handwritten signature of John Engler

ENTERPRISE
OIL
WAYNE

CERTIFIED MAIL - RETURN RECEIPT
REQUESTED

Mr. Stuart Ruben, CEO
Motor Oil Refining Co.
7601 West 47th St.
McCook, Illinois 60525

RE: Enterprise Oil site, 14445 Linwood, Detroit, Wayne County, Michigan.

Dear Mr. Ruben:

On Tuesday, July 23, 1991, staff of the Michigan Department of Natural Resources, Environmental Response Division, received several calls through Department's Pollution Emergency Alert System (PEAS) regarding spillage of at the subject facility. We were informed that the release of oil was caused by vandals opening and removing several valves to series of above ground storage tanks on site that contained an unknown quantity of waste oil.

On Thursday July 25, 1991, and Friday, July 26, 1991, Department staff conducted an inspection of the subject site. These inspections did confirm presence of ponded-oil in the diked oil-storage areas and along the railroad tracks east of the site. Oily stained soils were observed at several locations and there was also an accumulation of trash, debris, abandoned equipment, tanks, etc. throughout the site. The Department has since been informed that over 50,000 gallons of waste-oil has been pumped and removed from the site.

Rule 323.6(a) of Act 245, the Michigan Water Resources Commission Act, P.A. 1929 as amended, prohibits the discharge of any substance to the waters of the state that is or could be injurious to public health. The Department is concerned that the releases of oil from this site could impact surface and ground water in the area.

A title search for the subject property has identified you as the owner/operator. This letter will serve as notice to you as a potentially responsible party, pursuant to R 299.115 of Act 307, the Michigan Environmental Response Act, P.A. 1982 as amended. Section 10(a) of Act 307 also requires that owner/operators notify the Department within 24 hours upon discovery of a release of a hazardous substance.

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.
3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends of space permits. Otherwise, affix to back of article. Endorse front of article RETURN RECEIPT REQUESTED adjacent to the number.

Mr. Stuart Ruben

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Based on staff observations at the site and in lieu of the requirements of Act 307, the MDNR requests that you voluntarily undertake the following actions to address the noncompliance at this site:

1. Immediately repair those areas along the site fence that have been damaged or stolen. This site has become an attractive nuisance for those individuals in the scrap steel or salvage business and it is imperative that the general public be kept away from this site. Because of the potential fire and environmental hazards, please submit a plan to institute strict security and restrict unauthorized entry into the property.
2. Immediately identify and characterize all waste liquids within all tanks on site. Immediately drain and pump out all waste oil and other liquids from all of the tanks on site for disposal at a licensed facility (i.e. per waste classification, hazardous/non-hazardous, etc.).
3. Continue to pump and remove all ponded oil from the dike areas and those areas along the railroad track until all free-product has been removed.
4. Upon pumping out all waste oil and other liquids, immediately arrange for the removal and disposal of all abandoned above-ground storage tanks.
5. Submit to the Department, within 30 days, a site investigation plan that will adequately define the areal extent of the releases.
6. Immediately arrange for surface removal of oily contaminated soil along the railroad track and within the bounds of the site.
7. Immediately arrange for the demolition and removal of all unused or abandoned structures, building, equipment, etc. on site.
8. Notify the Department as to the number and location of any underground storage tanks on site. Engineering plans for the site that show utility corridors, drains, etc. are also needed.

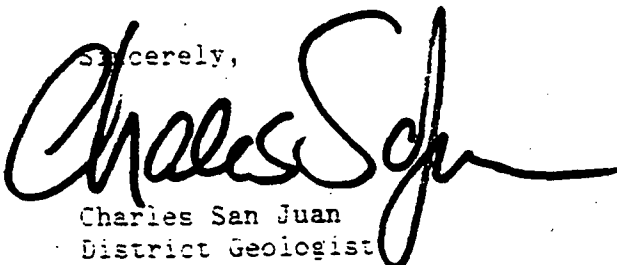
Please notify this office within 7 days of the date of this letter to indicate your intention to comply with the above requested work items. Further, we are requesting that you complete the 8 corrective action tasks listed in this letter within 90 days. We are also asking that you submit item #5 (site investigation plan) to MDNR within 30 days.

Please be advised that Act 307 provides for penalties and fines up to \$25,000 dollars/day for failure to comply with the requirement of Section 10a. Please contact me direct @ 313 953-1497 if you have further questions.

Mr. Stuart Ruben

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Sincerely,

A handwritten signature in black ink, appearing to read "Charles San Juan". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Charles San Juan
District Geologist
Environmental Response Division
Southeast Michigan Field Office

cc: Oladipo Oyinsan, ERD
Mary Vanderlaan, ERD
Bob Maddox, M.L. Asbury Inc.

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION

ACTIVITY REPORT

ACTIVITY		PROGRAM	
<input type="checkbox"/> RI/FS	<input type="checkbox"/> Complaint Investigation	<input type="checkbox"/> CERCLA	
<input type="checkbox"/> Clean up Activities	<input type="checkbox"/> Contractor Oversight	<input type="checkbox"/> Act 307	
<input checked="" type="checkbox"/> Phone Notes	<input type="checkbox"/> Photos Taken	<input type="checkbox"/> Act 245	
<input type="checkbox"/> Samples Taken		<input type="checkbox"/> LUST	
		<input type="checkbox"/> Other	

City/State Name Enterprise Oil	County WAYNE	Date 7/25/91	Time on Activity
Address DORIS E LINWOOD	City/Township	Facility/Site Number	Staff CST
Occupants/Contacts			

REMARKS: PHONE NOTES

PEAS call 7/23/91 12:30 P.M.

Spoke w/ Stuart Ruben (708) 442-6000
advised that cleanup must start IMMEDIATELY

- SAID that he is MAKING ARRANGEMENTS
FOR cleanup

7/25/91 - Spoke w/ a Rich Harris - SAID that
ASBURY TRUCKING ON SITE TO PUMP DIKE
SAID that on TUE tanks were plugged
VALVES removed plus TUE P.M.
Additional Spill was drained tanks

ASKED ABOUT FENCE & SECURITY Guard -
SAID that previous fence was stolen
Security Guard removed due to death threats

Signature Charles S. [Signature]	Date 7/25/91
Distribution: <input type="checkbox"/> District File <input type="checkbox"/> Regional Supervisor <input type="checkbox"/> Other	

~~Remove to attach waste haulers business card~~

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION

ACTIVITY REPORT

ACTIVITY

- ☐ RI/FS
- ☐ Complaint Investigation
- ☐ Clean-up Activities
- ☐ Contractor Oversight
- ☐ Photos Taken
- ☐ Samples Taken

PROGRAM

- ☐ CERCLA
- ☐ Act 307
- ☐ Act 245
- ☐ LUST
- ☐ Other

Facility Name Interpre Oil	County Wayne	Date 7/26/91	Time on Activity 37 hrs
Address 555	City/Township Detroit	Facility/Site Number	Staff DIPR/Khonde

Participants/Contacts

MARKS:

Linda Cross and myself inspected this site in response to the PEMS call received 2 days ago. The facility is an abandoned tank farm near Vandals, opened this in an attempt to sell some copper fittings opened the valve into 6-8 tanks with capacity ranging from 250,000gal to 5000gal tanks several gallons of oil were released into the secondary containment, hence the ground during our inspection we met a waste hauler who had been contracted to pump out the spilled oil. The hauler indicated that on 7/24/91, he hauled 12,500gal, 9,500gal and 7,500gal (total 29,500gal) of Crank Case oil pumped out of the ground to fresh kerosene oil. During our visit, pumping was still going on from a depression.

Signature _____ Date _____

located in the Santaymment of Tank #2
and on the other side of the railroad
acks. Mr. Maddox called on ~~1/3/80~~ today
and indicated that a total of 14,500
is dumped and hauled to Elser yesterday
indicated yesterday that he has been
authorized to pump out the tanks but
cannot do that until he knows the content
and disposal options. He will also send us
copies of the manifest.

In the afternoon, Mr. We stopped
across the street to talk to Jim Ryd
owner of Midwest Ice. He indicated that
he had been working with the Company
to acquire the abandoned property, first
as a Community park, then as a business
development. The Company was willing to
clean the site up and deed the property
to him but he has since changed his
mind due to the severity of the contamination
and the presence of some LUST at the site. He
gave a brief history of the site, how it's
been difficult to secure due to vandalism
and he has been calling the Fire Dept
on a regular basis with no action. He
in fact, hired a plumber two days ago to
plug the leak from the tanks after he
skipped over 2 1/2 ft of product in the center

Signature: _____ Date: _____

Signature:

Date:

7/26/91

ACTIVITY REPORT

ACTIVITY

- ☐ RI/FS
☐ Complaint Investigation
☐ Clean-up Activities
☐ Contractor Oversight
☐ Photos Taken
☐ Samples Taken

FILE OIL INCIDENT

PROGRAM

- ☐ CERCLA
☐ Act 307
☐ Act 245
☐ LUST
☐ Other

WAYNE

Site Name

ENTERPRISE OIL

County

WAYNE

Date

7/26/91

Time on Activity

Address
 LINWOOD & DORIS

City/Township

Detroit

State

MI

Participants/Contacts

MARKS:

11:15 7/26/91 ON SITE - SPOKE W/A

Jerry Snyder - M.L. ASBURY, INC. 841 1457

Estimate

Bob Maddox - Contact for estimate on amount
 Dumpster M.L. ASBURY

- WALKED ENTIRE SITE - SITE IS A COMPLETE MESS

- OIL STAINED SOIL EVERYWHERE -

- BLDG'S HAVE REFUSE/JUNK/DEBRIS SCATTERED
 ABOUT & IN PILES

- Oil release from S storage area has
 impacted RR track area east of site

- Two individuals from ASBURY working at
 RR track

Signature

Date

Distribution:

- 1 - District File
 1 - Regional Supervisor
 - Other

ADD ADDITIONAL SHEETS AS NECESSARY

R 5532

8/87

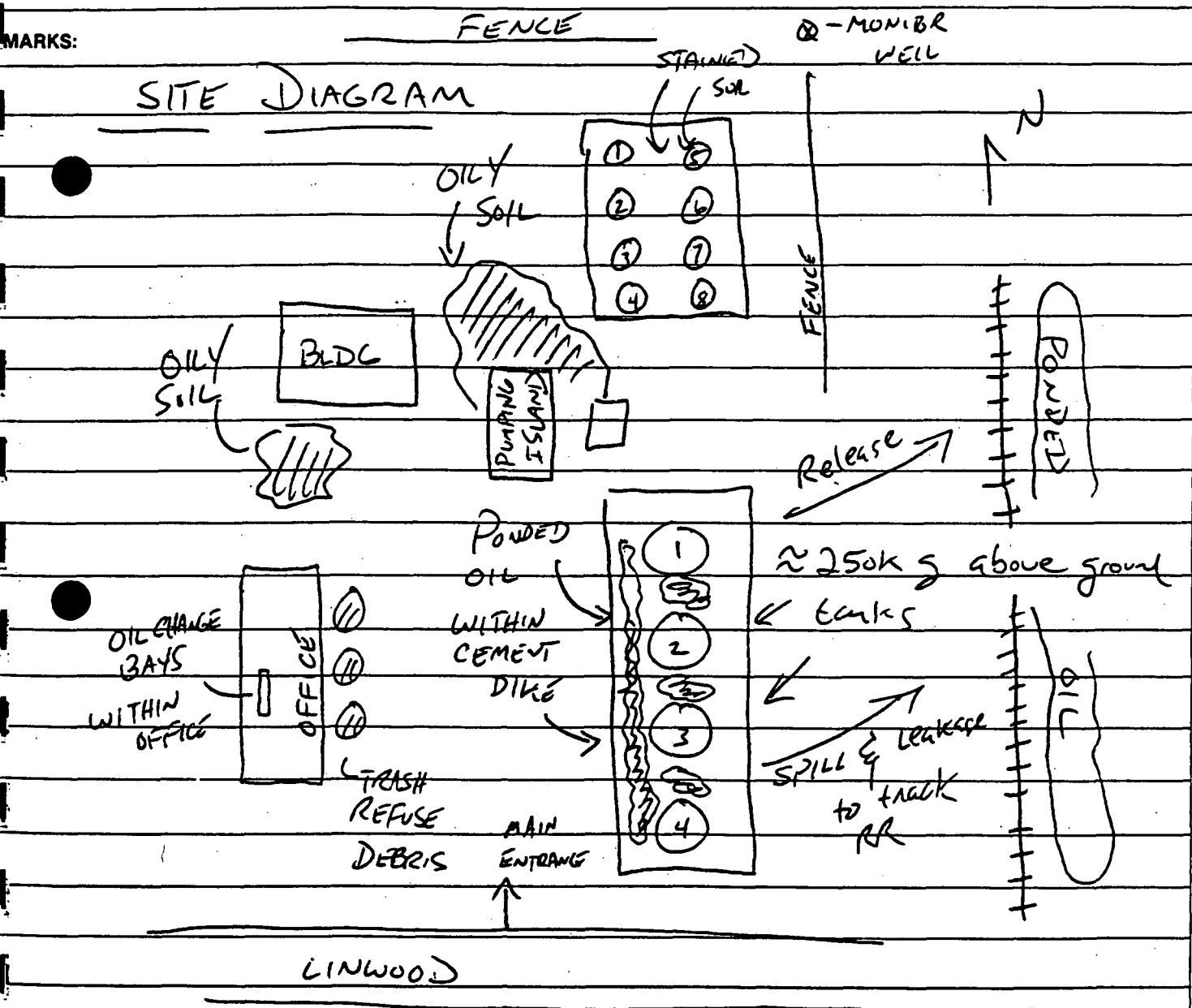
DEPARTMENT OF NATURAL RESOURCES
 ENVIRONMENTAL RESPONSE DIVISION

ACTIVITY REPORT

- ACTIVITY**
- ☐ RI/FS
 - ☐ Complaint Investigation
 - ☐ Clean-up Activities
 - ☐ Contractor Oversight
 - ☐ Photos Taken
 - ☐ Samples Taken

- PROGRAM**
- ☐ CERCLA
 - ☐ Act 307
 - ☐ Act 245
 - ☐ LUST
 - ☐ Other

City/State Name ENTERPRISE OIL		County WAYNE	Date 7/26/91	Time on Activity
Address		City/Township Detroit	Facility/State Number 05	
Participants/Contacts				



Signature _____ Date _____

ACTIVITY REPORT

ACTIVITY

- ☐ RI/FS
☐ Complaint Investigation
☐ Clean-up Activities
☐ Contractor Oversight
☐ Photos Taken
☐ Samples Taken

PROGRAM

- ☐ CERCLA
☐ Act 307
☐ Act 245
☐ LUST
☐ Other

Site Name ENTERPRISE OIL	County WAYNE	Date 7/26/91	Time on Activity
Staff CS	City/Township	Facility/Site Number	

REMARKS:

- SPOKE w/ 2 INDIVIDUALS WHO WERE ON SITE ILLEGALLY (TRESSPASSING) & REMOVING SCRAP STEEL
- INDIVIDUALS HAD CUTTING TORCH IN THE BACK OF THEIR PICKUP
- SAID THAT THEY ARE TAKING SCRAP STEEL TO 6 MI E GRANT
- SAID THEY RECEIVE \$45.00/TON
- SOME OF THE SITE FENCE GONE ALONG EAST SIDE NEAR RR TRACK
- NOTED 3 MWS ON SITE -

Signature: Charles S. [Signature] Date: 7/26/91

ADD ADDITIONAL SHEETS AS NECESSARY

R 5532

6/87

RECEIVING OFFICE

FEAS NUMBER:

INCIDENT NUMBER:

DISTRICT:

DATE OF CALL: 4/24/91

TIME OF CALL: 3:00

CALL TAKEN BY: S. BEAM

DIVISION: ERD

FF PERSON ASSIGNED: Chuck San Juan

COMPLAINT SOURCE

FF/SOURCE: LT. JOHNSON - MICH. STATE POLICE

ADDRESS:

FF NUMBER: (BIB) 473-1119

INCIDENT INFORMATION

DESCRIPTION: VALVES WERE OPENED ON ABOVE-GROUND WASTE FUEL TANKS. PRODUCT IS AT LEAST PARTIALLY CONTAINED IN DYKES. CHIEF WATKINSON OF CITY OF DETROIT FIRE DEPT. IS ON THE SCENE. ARE PUMPING NOW FROM THE DYKES. CARL JOHNSON WOULD LIKE A CALL AT (410-9740). HE IS THE COUNTY: WAYNE CIVIL DEFENSE COORDINATOR FOR THE CITY

FACILITY NAME: ~~WASTE OIL REFINERY~~

ADDRESS: LINDWOOD & DORIS

864-1800

Carl Johnson
office phone

PHONE NUMBER: ()

SECTION:

QUARTER:

QUARTER:

TOWNSHIP:

RANGE:

ACT PERSON:

RELATIONSHIP TO INCIDENT:

NOTIFICATIONS:

400-500yd area impacted - along
Motor Oil Refinery is doing
clean-up on the ground

COMPANY/FACILITY INFORMATION

NAME:

ADDRESS: LINDWOOD & DORIS

Free Marshall
Enterprise Oil Refinery
MICH.

PHONE NUMBER: ()

ACT PERSON:

☐ OWNER ☐ OPERATOR ☐ TRANSPORTER ☐ GENERATOR

INCIDENT STATUS

☒ IN PROGRESS ☐ SEELEY:☐ UNABLE TO CONFIRM INCIDENT REPORT☐ NO FURTHER RESPONSE/COMMENTS/BASIS:☐ RE CLEAN-UP COMPLETED

ESTIMATED COST:

☐ STATE CLEAN-UP COMPLETED

ESTIMATED COST:

☐ REFER TO ERD MASTER SITE DATABASE

(NOTE: See Appendix D in ITS Users Guide for Definition of "Site of Environmental Contamination")

UNIQUE SITE:

SITE NAME:

☐ REFER PRIMARY RESPONSIBILITY TO:☐ SNOB ☐ MDA ☐ MND ☐ MDPH ☐ AOD ☐ GSI☐ LOCAL HEALTH DEPT. ☐ OTHER: SPECIFY:

CONTACT PERSON:

DATE OF STATUS:

PLACE/POINT OF RELEASE

UNKNOWN

DÜMİ

517.F.

SPECIFY:

517.F.

NUMBER

S I 7.F. =

NS 17.F.

NUMBER

SIZE =

517.F.

SPECIES:

CONTAMINANT (5) CATEGORY:

HEATING OIL

1985-1986

FERTILIZER

1-11 DRINF./CHLORIDES

PESTICIDES (HERBICIDES) INSECTICIDES FUNGICIDES

131501.VF.NT

SPECIFY:

OTHERS:

SPELLEY

LESEI. FUF.I.

OTHER PETROLEUM PRODUCTS WASTE

LEAD METALS

SOLID WASTE.

ESTIMATED TOTAL QUANTITY LOST:

12 GALLONS

1511 GUNIC YARDS

FIELD FINDINGS

10 TONS

1. OTHER - SPECIFY:

RF.SOURCE
AFFECTED

**RESOURCE
POTENTIALLY AFFECTED**

SEDIMENT

SURFACE WATER

GROUNDWATER

ΛΙΡ

5011

WETLANDS

MUNICIPAL WELLS

RESIDENTIAL WEL

COMMERCIAL WEIR

FAUNA

FLORA

OTHER - SPECIFIC

RECEIVING OFFICE

INCIDENT NUMBER:

FEAS NUMBER:

DISTRICT:

DATE OF CALL:

7-23-91

TIME OF CALL:

2:11 pm

CALL TAKEN BY:

Dave Wall

DIVISION:

PERSON ASSIGNED:

Chuck

COMPLAINT SOURCE

NAME/SOURCE:

ADDRESS:

Watkins, Chief. City of Det

PHONE NUMBER:

() 410-9740

Fire Dept.

INCIDENT INFORMATION

DESCRIPTION:

Waste oil leaking onto ground, in
contaminant. Doesn't know what volume of
oil. is or whether it can be contained
all tanks in area "leaking. Some mostly water, some waste oil.

COUNTY:

Wayne

FACILITY NAME:

Former Marko Oil, (AKA Enterprise) Bankruptcy
Oil

ADDRESS:

Detroit

TOWNSHIP:

()

RANGE:

SECTION:

QUARTER:

QUARTER:

CONTACT PERSON:

RELATIONSHIP TO INCIDENT:

SPECIFICATIONS:

COMPANY/FACILITY INFORMATION

NAME:

ADDRESS:

PHONE NUMBER:

()

CONTACT PERSON:

☐ OWNER ☐ OPERATOR ☐ TRANSPORTER ☐ GENERATOR

INCIDENT STATUS

☐ IN PROGRESS SPECIFY:☐ UNABLE TO CONFIRM INCIDENT REPORT☐ NO FURTHER RESPONSE! COMMENTS/BASIS:☐ RE CLEAN-UP COMPLETED

ESTIMATED COST:

☐ STATE CLEAN-UP COMPLETED

ESTIMATED COST:

☐ REFER TO ERD MASTER SITE DATABASE

(NOTE: See Appendix B in ERS Users Guide for Definition of
"Site of Environmental Contamination")

UNIQUE SITE #:

SITE NAME:

☐ REFER PRIMARY RESPONSIBILITY TO:☐ SWD☐ MHA☐ WHD☐ MDPH☐ AQD☐ GSD☐ LOCAL HEALTH DEPT☐ OTHER: SPECIFY:

CONTACT PERSON:

Midwest

Ice



14450 Linwood Avenue
Detroit, Michigan 48238

313/868-8800

RECEIVED

JUN 10 1991

ENV. RESPONSE DIV
DETROIT DIST. OFC.

6-6-91

TO: Mary Vanderhaar:

FROM: James Ryder

RE: Enterprise Oil Gas and Oil Tanks
on Linwood Ave. - Detroit.

The enclosed pictures will show you a
current condition of this location -
please help us!

Midwest Ice

Linwood/Oakwood

Enterprise Oil Co.

14419 Linwood

Sincerely,

Jim Ryder
Midwest Ice Co.
868-8800

James Ryder

Tim Ryder - Midwest Ice 6-5-91
2:41 pm

le: Enterprise Oil, ~14000 Linwood, Detroit.
Above ground ^{tanks} site w/ problems re
leaking several acres in extent
Facility vandalized ^{bulldozed} distribution depot.
bankruptcy.

ants to know if clean up in progress
if any action pending by DNR
representatives of business group
in List: DB
if and when they want 307 mt?

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL RESPONSE DIVISION

ACTIVITY REPORT

ACTIVITY

- ☐ RI/FS
- ☐ Complaint Investigation
- ☐ Clean-up Activities
- ☐ Contractor Oversight
- ☒ *Phone call*
- ☐ Photos Taken
- ☐ Samples Taken

PROGRAM

- ☐ CERCLA
- ☐ Act 307
- ☒ Act 245
- ☐ LUST
- ☐ Other

Facility/Site Name <i>Enterprise oil.</i>	County <i>DeWitt</i>	Date <i>5-21-90</i>	Time on Activity
Address <i>4445 Linwood</i>	City/Township <i>DeWitt</i>	Facility/Site Number	Staff <i>F. Mitchell</i>
Incidents/Contacts			

MARKS: Spoke with Mr. Wearing about spill clean up at Enterprise oil. He stated that some clean-up had been conducted. (There were on-site during clean-up) ~~are~~; however, clean-off from the driveway was discussed. They planned on continuing clean-up within next two weeks. I will notify our office in advance. At that time, a site inspection will be conducted to assess any soil contamination and/or other env. problems that may exist, including underground storage tanks.

Signature *F. Mitchell* Date *5/24/90*

Distribution: ADD ADDITIONAL SHEETS AS NECESSARY

- ☐ Original - District File
- ☐ Copy - Regional Supervisor
- ☐ Other

NATURAL RESOURCES

RESPONSE DIVISION

ACTIVITY REPORT

ACTIVITY

- ☐ RI/FS
- ☐ Complaint Investigation
- ☐ Clean-up Activities
- ☐ Contractor Oversight
- ☒ Meeting
- ☐ Photos Taken
- ☐ Samples Taken

PROGRAM

- ☐ CERCLA
- ☐ Act 307
- ☒ Act 245
- ☐ LUST
- ☐ Other

Date 4-30-90 Time on Activity 2 hrs

County _____ Facility/Site Number _____

City/Township Detroit State F. Mitchell

Enterprise Oil (Moreco)

45 LINWOOD

(Abandoned Facility)

Met with Donald Robinson, City of Detroit Fire Marshal and Richard Werring of Motor Oil Refining Company to discuss conditions at the Enterprise Oil location at the above address.

Mr. Robinson expressed concerns about fire hazards that may exist at the site.

Residue left in the tanks. The recent spill at the property, and that the site is insecure. Mr. Werring stated

the tanks were empty ^(do he know) but were not cleaned out. However, tanks outside

the tank farm area may contain product. A expressed concerns

with soil contamination & 6 underground storage tank which have not been addressed. Mr. Werring stated he will

inform his Superior of the problem & will clean up recent spill at site & notify the

Signature J. Mitchell Date in advance

Distribution:
 Original - District File
 Copy - Regional Supervisor
 Copy - Other

ADD ADDITIONAL SHEETS AS NECESSARY

RECEIVING OFFICE

14036390

INCIDENT NUMBER:

DISTRICT: N-V

DATE OF CALL: 4-26-90

CALL TAKEN BY: F. Midelet

PEAS NUMBER:

TIME OF CALL: 940 am

STAFF PERSON ASSIGNED:

DIVISION: ERD

COMPLAINT SOURCE

NAME/SOURCE:

ADDRESS:

Insp Stamp / Cpt. Berry. / Cpt. Smith
Detroit Fire Dept.

PHONE NUMBER: (313) 596-2930

INCIDENT INFORMATION

DESCRIPTION:

200-300 gal. waste oil spill, Confined to
property. From Above Ground Tank,
closed-facility. Fire Dept placed sand
over spill

COUNTY: Wayne

FACILITY NAME:

Enterprise Oil (Moreco Oil)

ADDRESS: 14445 Linwood, Off Fankell Ave.
Detroit, MI

PHONE NUMBER: ()

TOWNSHIP:

RANGE:

SECTION:

QUARTER:

QUARTER:

CONTACT PERSON:

RELATIONSHIP TO INCIDENT:

CERTIFICATIONS:

COMPANY/FACILITY INFORMATION

NAME:

Moreco Energy, Inc.

ADDRESS:

7601 W. 47th St.
McCook, Ill. 60525

PHONE NUMBER: (708) 442-6000

CONTACT PERSON:

Steward Ruben

☒ OWNER ☒ OPERATOR ☐ TRANSPORTER ☐ GENERATOR

INCIDENT STATUS

☒ IN PROGRESS SPECIFY:☐ UNABLE TO CONFIRM INCIDENT REPORT☐ NO FURTHER RESPONSE: COMMENTS/BASIS:☐ RP CLEAN-UP COMPLETED

ESTIMATED COST:

☐ STATE CLEAN-UP COMPLETED

ESTIMATED COST:

☐ REFER TO ERD MASTER SITE DATABASE(NOTE: See Appendix B in ITS Users Guide for Definition of
"Site of Environmental Contamination")

UNIQUE SITE #:

SITE NAME:

☐ REFER PRIMARY RESPONSIBILITY TO:☐ SWQD☐ MDA☐ WMD☐ MDPH☐ AQD☐ GSD☐ LOCAL HEALTH DEPT☐ OTHER: SPECIFY:

CONTACT PERSON:

DATE OF STATUS:

INCIDENT NUMBER:

INCIDENT NUMBER:

SOURCE/POINT OF RELEASE:

- ```

[] PIPELINE
[] DUMP
[] TANKER
 SIZE:
[] TRANSPORTATION
 SPECIFY:
[] CONTAINER/ROLLOFF BOX
 SIZE:
[] BARREL/DRUM
 NUMBER: SIZE:
[] ABOVEGROUND TANK
 SIZE:
[] UNDERGROUND TANK
 NUMBER: SIZE:
[] LAGOON
 SIZE:
[] OTHER
 SPECIFY:
[] SURFACE DISCHARGE
[] UNKNOWN

```

**CONTAMINANT (S) CATEGORY:**

- ```

[ ] GASOLINE
[ ] HEATING OIL
[ ] PCBs
[ ] FERTILIZER
[ ] BRINE/CHLORIDES
[ ] PESTICIDES (HERBICIDES, INSECTICIDES, ETC.)
[ ] SOLVENTS
SPECIFY:
[ ] OTHER:
SPECIFY:
[ ] DIESEL FUEL
[ ] OTHER PETROLEUM PRODUCTS
[ ] METALS
[ ] SOLID WASTE

```

ESTIMATED TOTAL QUANTITY LOST: 200-300

- ☒ GALLONS
☐ CUBIC YARDS
☐ POUNDS
☐ TONS
☐ OTHER - SPECIFY:

RESOURCE
AFFECTED

RESOURCE
POTENTIALLY AFFECTED

- | | | |
|------------------|-----|-----|
| SEDIMENT | [] | [] |
| SURFACE WATER | [] | [] |
| GROUNDWATER | [] | [] |
| AIR | [] | [] |
| SOIL | [] | [] |
| WETLAND | [] | [] |
| MUNICIPAL WELL | [] | [] |
| RESIDENTIAL WELL | [] | [] |
| COMMERCIAL WELL | [] | [] |
| FAUNA | [] | [] |
| FLORA | [] | [] |
| OTHER - SPECIFY: | [] | [] |

From: Fire Marshal Division
Detroit Fire Department

Number **108048**

Date April 5 19 90

To: ☐ Building Bureau ☐ Health Department
☐ Safety Engineering Bureau ☐ Industrial Hygiene
☐ Electrical Bureau ☒ Sanitation Division — EPM
☐ Wayne County Dept. of Health — ☐ Sewer Division — Water Dept.
Air Pollution Control Div. ☐ Environmental Enforcement Bureau — EPM
☒ DEPT. NAT. RESOURCES

The following condition has been brought to our attention and is referred to your Department for investigation and disposition. A report of your findings is requested.

Building location 14015 Linwood

Name of Owner or Occupant MARTIN PIERCE and FRED LEWIS

Address 1601 W. 47th St. West Occupied as Abandoned Tack Farm

Nature of complaint

Possible Soil Contamination
from UNKNOWN substance

Inspector B. Harris

DONALD L. ROBINSON, Fire Marshal

C of D-566-RE (Rev. 1-75)

RECEIVING OFFICE

PEAS NUMBER:

INCIDENT NUMBER:

DISTRICT:

DATE OF CALL:

CALL TAKEN BY:

STAFF PERSON ASSIGNED:

TIME OF CALL:

DIVISION:

COMPLAINT SOURCE

NAME/SOURCE:

ADDRESS:

PHONE NUMBER:

INCIDENT INFORMATION

DESCRIPTION:

FOUR TANKS NEAR GATE, ONE LEAKING
EITHER OIL OR MINERAL SPIRITS. FACILITY
IS NOW ABANDONED.

LOCATION:

FACILITY NAME:

ADDRESS:

PHONE NUMBER:

TOWNSHIP:

RANGE:

SECTION:

QUARTER:

QUARTER:

CONTACT PERSON:

RELATIONSHIP TO INCIDENT:

NOTIFICATIONS:

COMPANY/FACILITY INFORMATION

NAME:

ADDRESS:

PHONE NUMBER:

CONTACT PERSON:

☐ OWNER☐ OPERATOR☐ TRANSPORTER☐ GENERATOR☐ GENERATOR

INCIDENT STATUS

☐ IN PROGRESS☐ UNABLE TO CONFIRM INCIDENT REPORT☐ FURTHER RESPONSE: COMMENTS/BASIS:☐ RP CLEAN-UP COMPLETED

ESTIMATED COST:

☐ STATE CLEAN-UP COMPLETED

ESTIMATED COST:

☐ REFER TO ERD MASTER SITE DATABASE

(NOTE: See Appendix B in ITS Users Guide for Definition of
"Site of Environmental Contamination")

UNIQUE SITE #:

SITE NAME:

☐ REFER PRIMARY RESPONSIBILITY TO:☐ SWQD☐ MDA☐ WMD☐ MDPH☐ AQD☐ GSD☐ LOCAL HEALTH DEPT☐ OTHER: SPECIFY:

CONTACT PERSON:

DATE OF STATUS:



Motor Oils Refining Company

7601 West 47th Street • McCook, Illinois 60525



Serving the Railroad
Industry Since 1929

(708) 442 - 6000
FAX (708) 442 - 6027

DATE: JULY 25, 1991

TO: DIPO OYINSAN & CHARLES SANJUAN

FAX NO: (313) 953-0245

ATTN: DIPO OYINSAN & CHARLES SANJUAN

TOTAL PAGES INCLUDING

COVER PAGE: 3

FROM: STUART RUBIN

CONTACT: NANCY WOLLENBERG

COMMENTS: _____

UNITED STATES BANKRUPTCY COURT

For the Northern District of Illinois, Eastern Division

FEIN 362227005

91B11886

Case No.

In re

MORECO ENERGY INC.,
d/b/a MOTOR OIL REFINING CO.,
Debtor.

Debtors

COAR, B1
383 / 3

VOLUNTARY CASE: DEBTORS' ~~XXX~~ PETITION

1. Petitioners' post-office address is 7601 West 47th Street, McCook, IL 60452
UNITED STATES BANKRUPTCY COURT
NORTHERN DISTRICT OF ILLINOIS

2. Petitioners have:

- () resided within this district for the preceding 180 days.
() had their domicile within this district for the preceding 180 days.
() had their principal place of business within this district for the preceding 180 days.
(X) had their principal assets within this district for the preceding 180 days.
() ☐ resided ☐ had their domicile ☐ had their principal place of business ☐ had their principal assets within this district for a longer portion of the preceding 180 days than in any other district.

JUN - 3 1991

WAYNE E. NELSON, CLERK

DEPUTY CLERK

3. Petitioners are qualified to file this petition and are entitled to the benefits of title 11, United States Code as voluntary debtors.

4.

WHEREFORE, petitioners pray for relief in accordance with chapter...11. of title 11, United States Code.

Signed:

Attorney for Petitioners.

Address:

[Petitioners sign if not represented by attorney.]

Petitioners.

~~XX~~ I STUART RUBIN ~~XXX~~ THE President of the petitioners named in the foregoing petition, certify under penalty of perjury that the foregoing is true and correct.

Executed on

Signature:

Signature:

Petitioners.

*Include all names used by debtors within the last 6 years.

*Indicate with an "X" the appropriate clause.

IN THE UNITED STATES BANKRUPTCY COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

IN THE MATTER OF
MORECO ENERGY, INC.,

Bankrupt

No.

91B11886

COAR, BJ
383

AUTOMATIC STAY

TO THE FOLLOWING NAMED CREDITORS:

You are hereby advised that the above captioned party(s) has been adjudicated a Bankrupt, and that pursuant to Bankruptcy Rules No. 401 and 601, the filing of the Bankruptcy Petition automatically operates as a stay of the commencement or continuation of any action against the Bankrupt.

RECEIVED
UNITED STATES BANKRUPTCY COURT
NORTHERN DISTRICT OF ILLINOIS

JUN - 3 1991

WAYNE E. NELSON, CLERK

BY _____
DEPUTY CLERK

Attorney for Bankrupt

APPENDIX B
ANNOTATED PHOTOGRAPHS



Site: Enterprise Oil
 Photo No: 1 Date: 09/06/91
 Direction: West
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William William
 Subject: TAT enters site. Note: gate
 is not secure.



Site: Enterprise Oil
 Photo No: 2 Date: 09/06/91
 Direction: Northwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Panorama: Building in
 disrepair, storage tanks by entrance.



Site: Enterprise Oil
 Photo No: 3 Date: 09/06/91
 Direction: West
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Panorama: Note buildings and
 aboveground tanks.



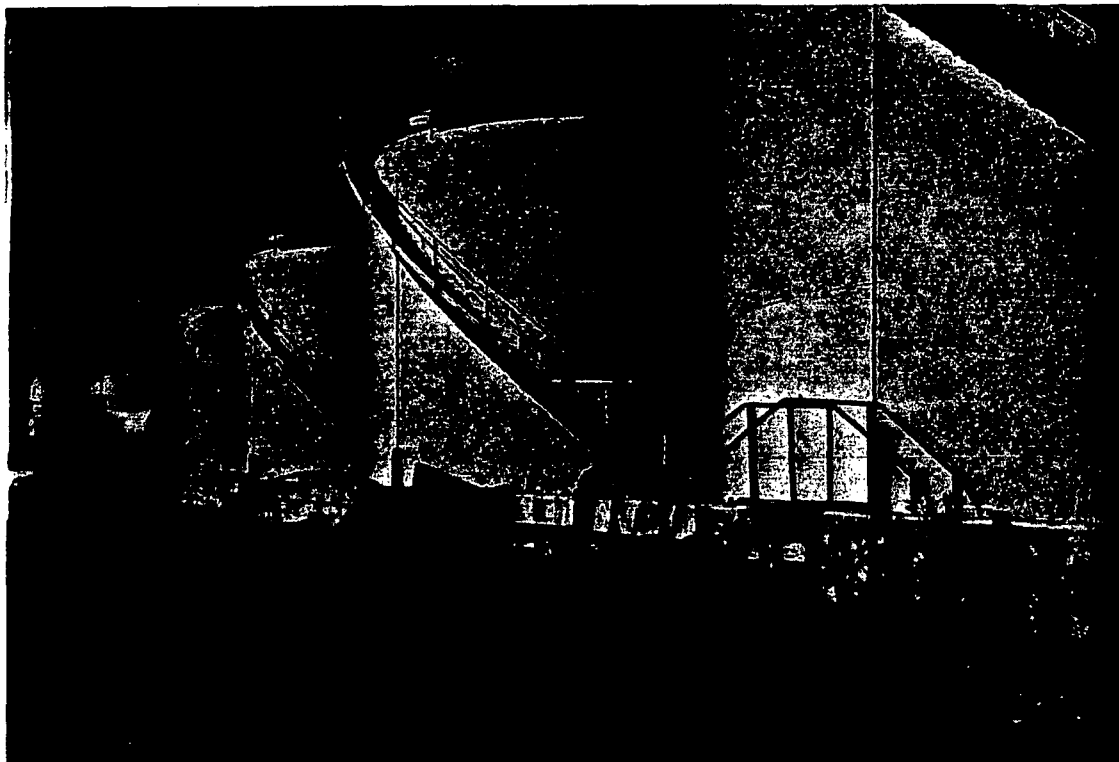
Site: Enterprise Oil
 Photo No: 4 Date: 09/06/91
 Direction: Southwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Panorama: Note building and
 aboveground tanks.



Site: Enterprise Oil
 Photo No: 5 Date: 09/06/91
 Direction: South
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Lab area in disrepair.



Site: Enterprise Oil
 Photo No: 6 Date 9-6-91
 Direction: West
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Lab area to left and AST's
 to right.



Site: Enterprise Oil
 Photo No: 7 Date: 09/06/91
 Direction: Northwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: 5000 barrel storage tanks.



Site: Enterprise Oil
 Photo No: 8 Date: 09/06/91
 Direction: Down
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: 5000 barrel tanks piping
 System. Note: Rt. valve absent.



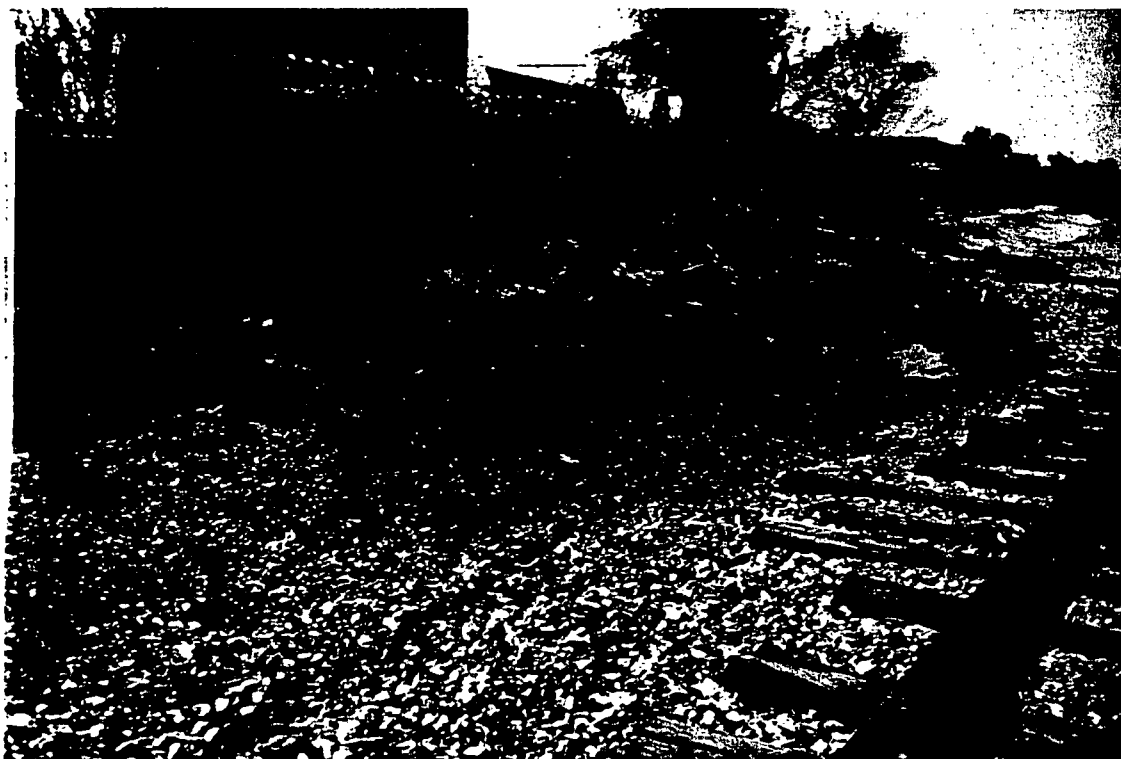
Site: Enterprise Oil
 Photo No: 9 Date: 09/06/91
 Direction: East
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Pipes near 5000 barrel
 tanks



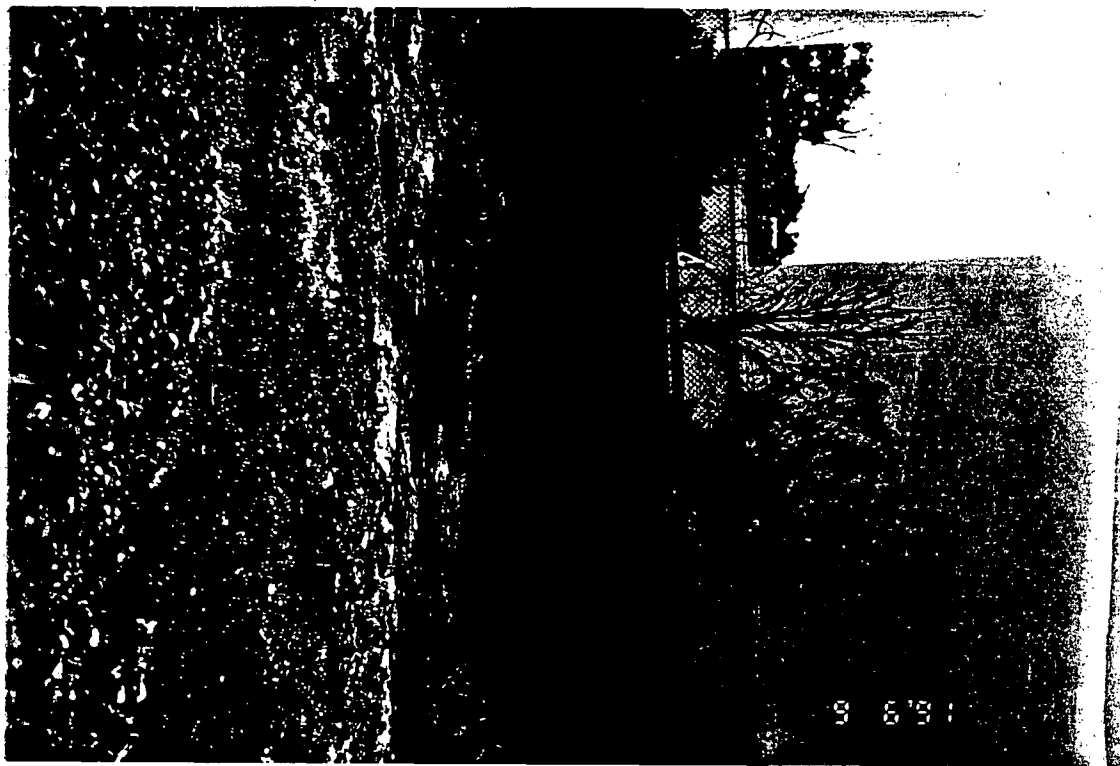
Site: Enterprise Oil
 Photo No: 10 Date: 9-6-91
 Direction: East
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Rear of office building in
 disrepair. Loading dock area.



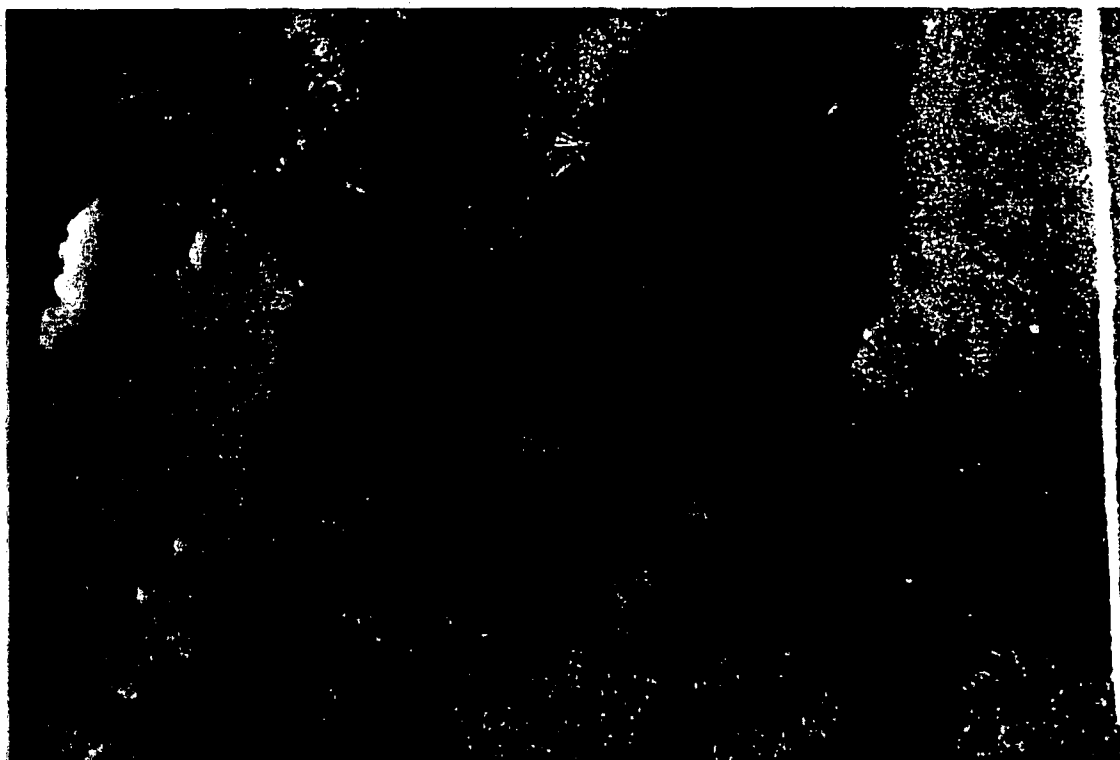
Site: Enterprise Oil
 Photo No: 11 Date: 09/06/91
 Direction: Southeast
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Vent pipes for UST.



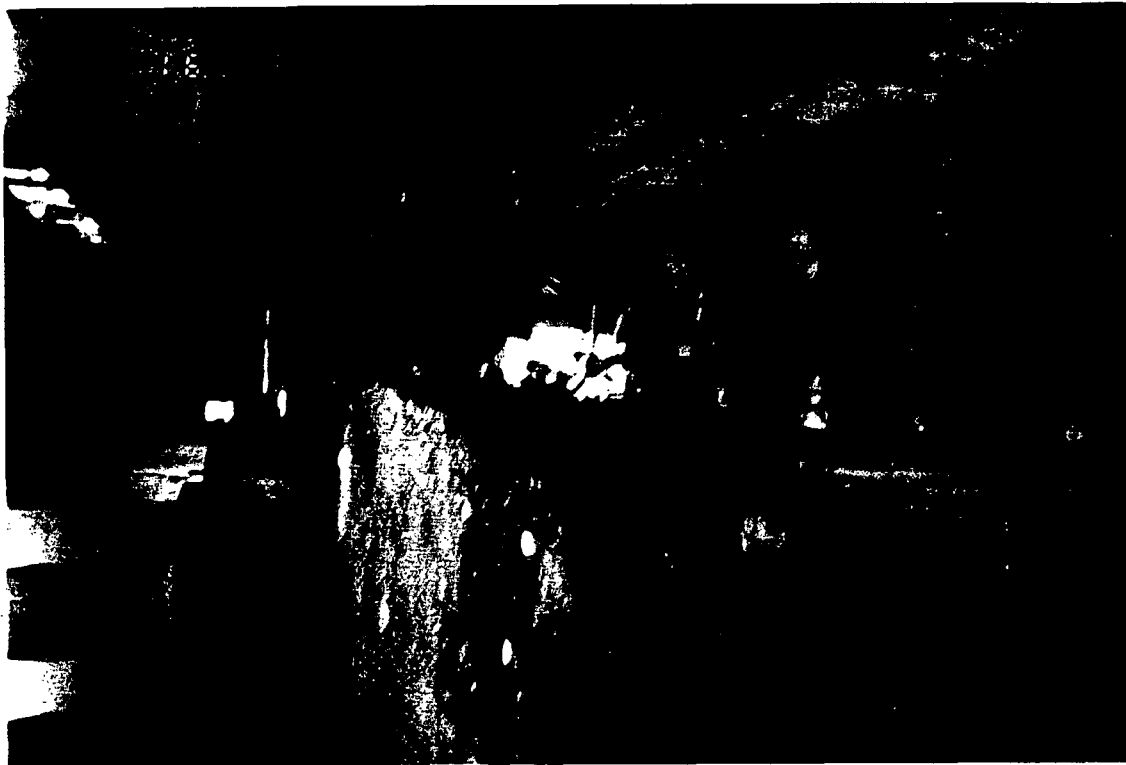
Site: Enterprise Oil.
 Photo No: 12 Date: 9-6-91
 Direction: Southwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Oil release migration point
 N of cement containment, S of Tracks.



Site: Enterprise Oil
 Photo No: 13 Date: 09/06/91
 Direction: South
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Spill between 5000 brl.
 tanks and Conrail tracks.



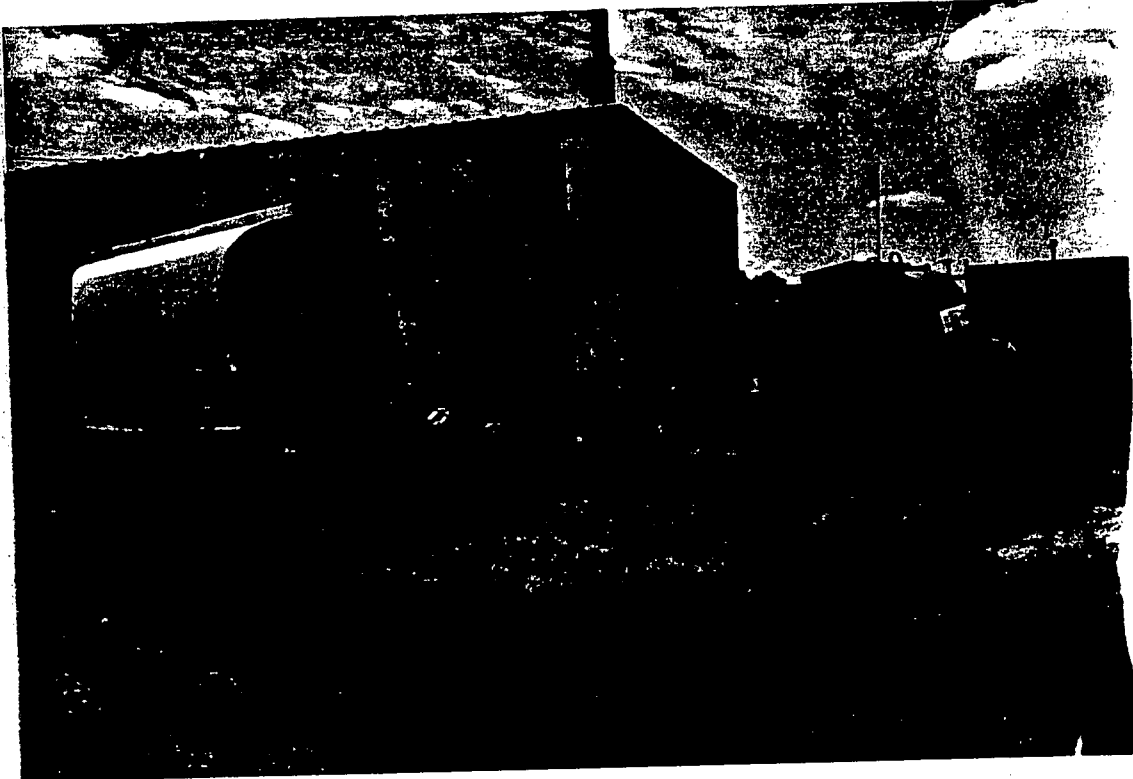
Site: Enterprise Oil
 Photo No: 14 Date: 9-6-91
 Direction: West
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Spilled oil migrated and
 collected in ditch N of Conrail Trks.



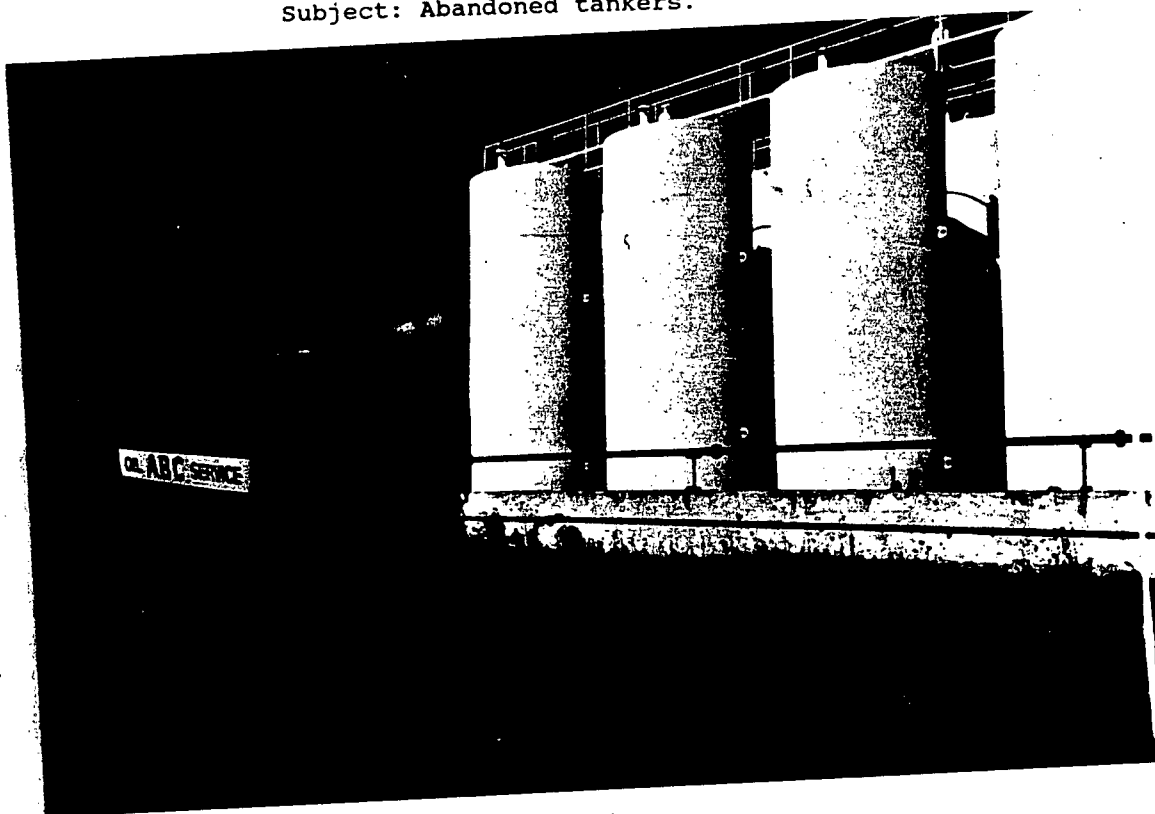
Site: Enterprise Oil
 Photo No: 15 Date: 09/06/91
 Direction: East
 Camera: OLYMPIC INFINITY 35mm
 Photographer: William Wilde
 Subject: Inside maintenance garage.



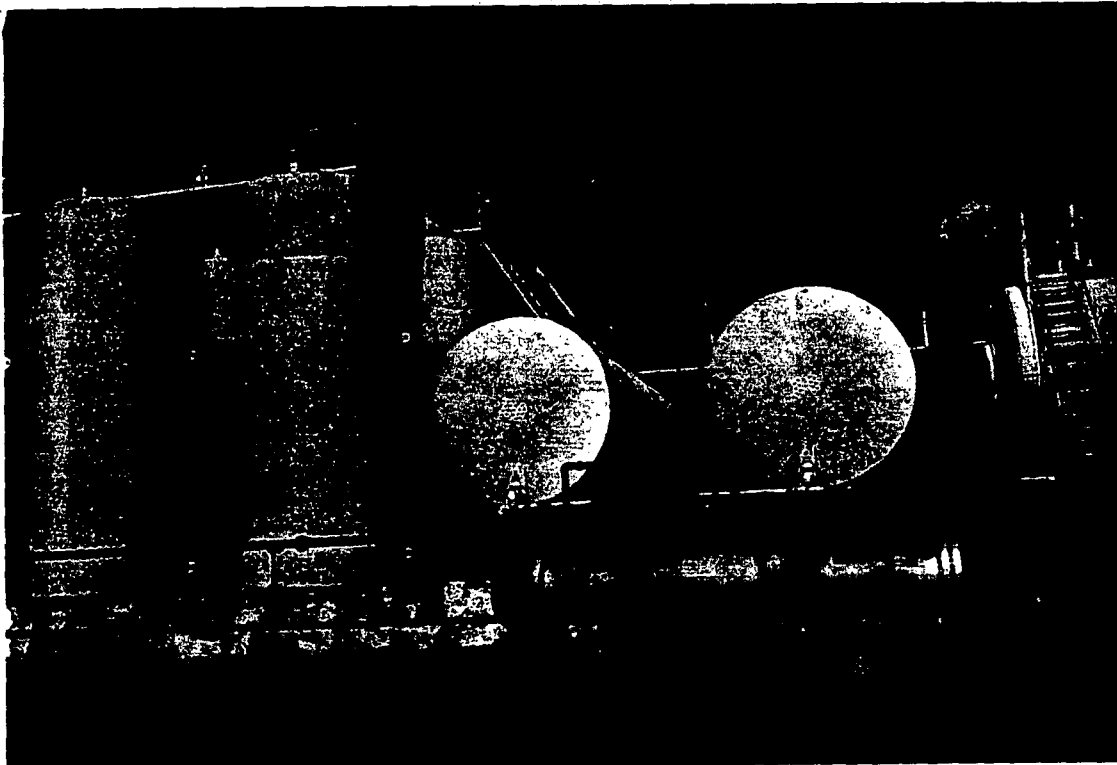
Site: Enterprise Oil
 Photo No: 16 Date: 9-6-91
 Direction: West
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Contaminated soil inside 20K
 gal. containment.



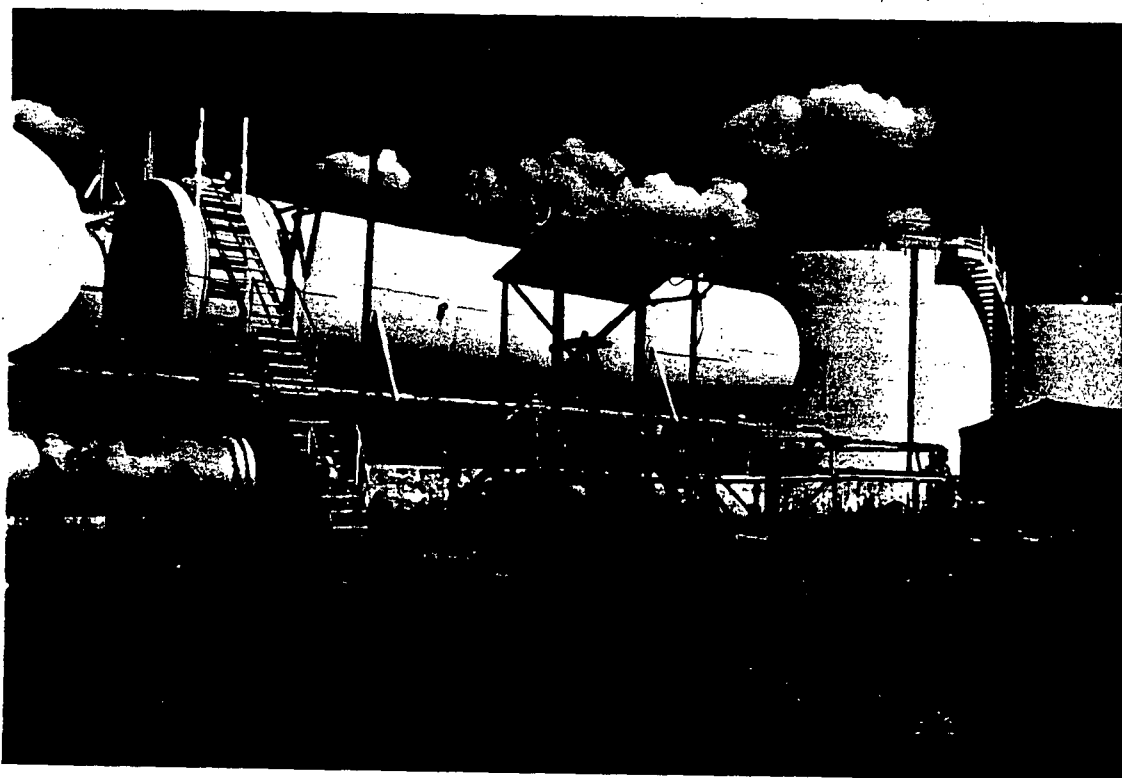
Site: Enterprise Oil
 Photo No: 17 Date 9-6-91
 Direction: Southwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Abandoned tankers.



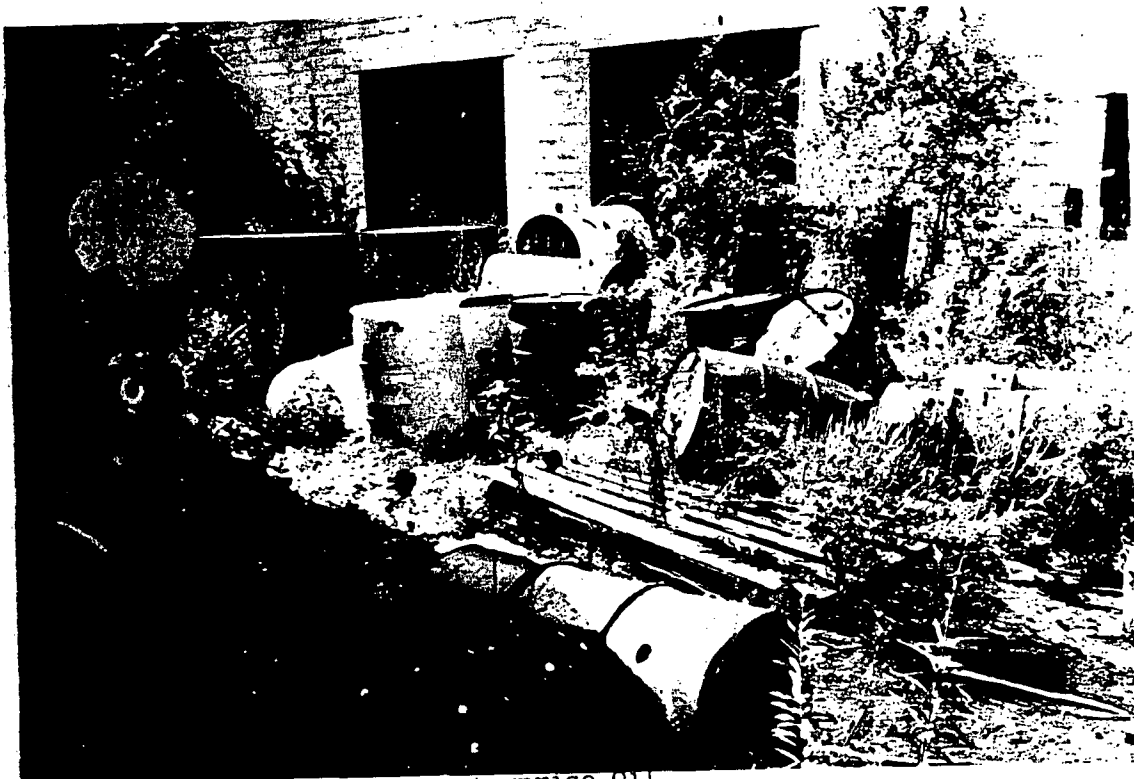
Site: Enterprise Oil
 Photo No: 18 Date: 9-6-91
 Direction: Northwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Tanker and 20K gal. storage tanks.



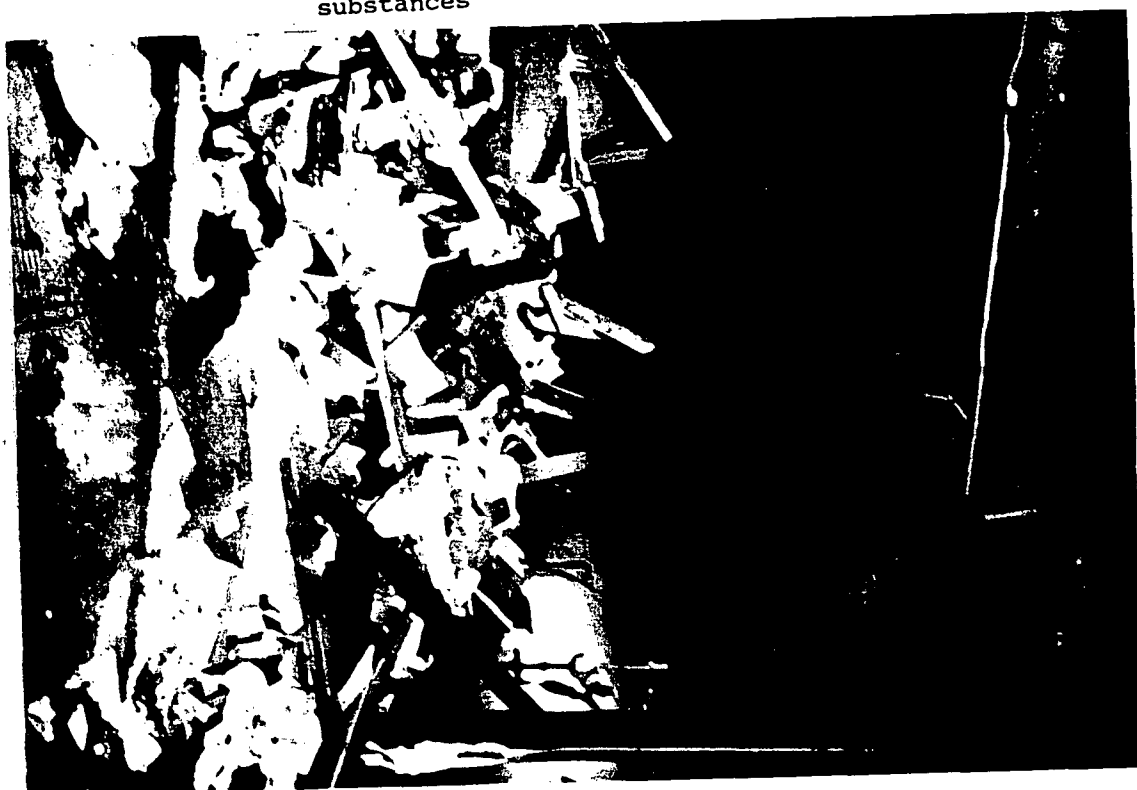
Site: Enterprise Oil
 Photo No: 19 Date: 9-6-91
 Direction: North
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: 20K gal. storage tanks and
 heat exchanger.



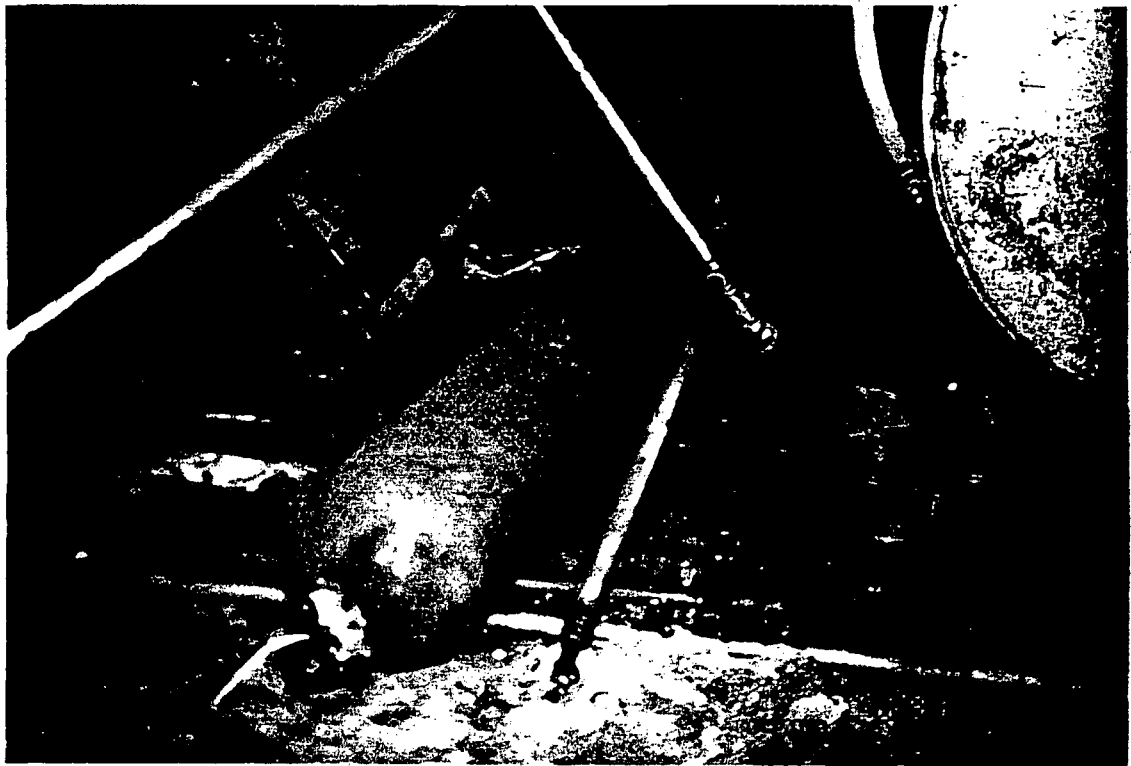
Site: Enterprise Oil
 Photo No: 20 Date: 9-6-91
 Direction: North
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: 20K gal. storage tanks and
 pump station.



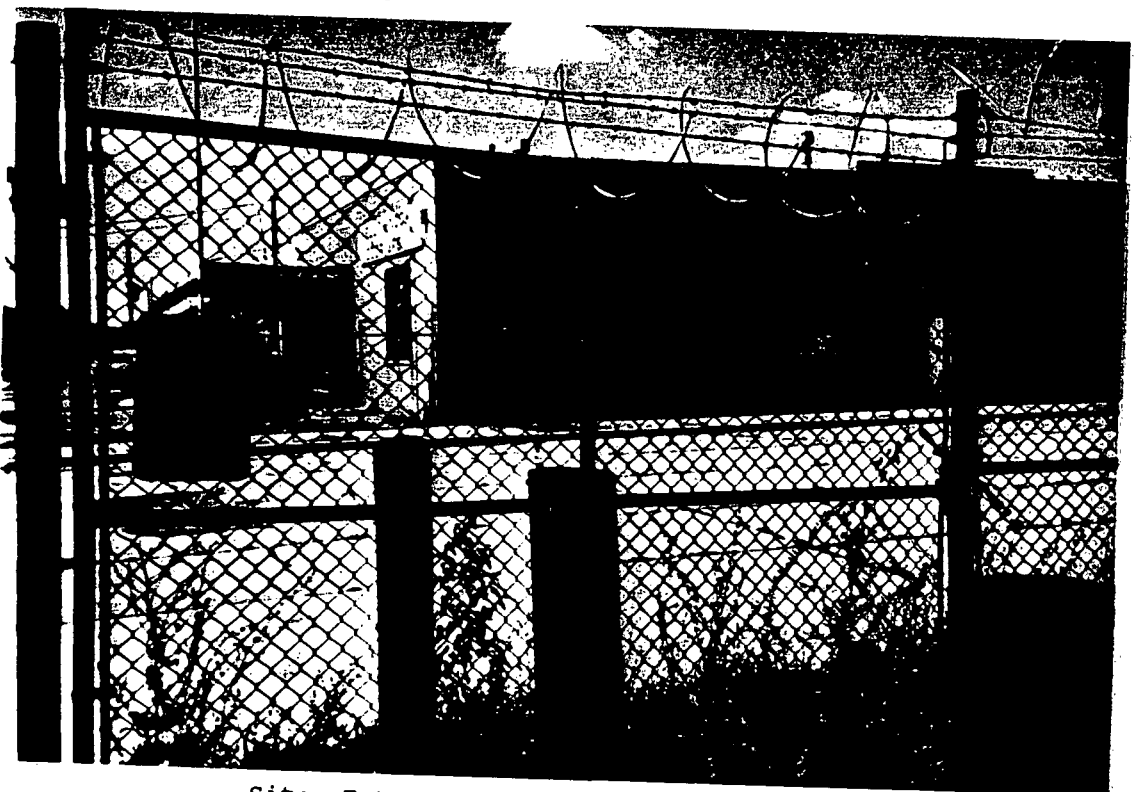
Site: Enterprise Oil
 Photo No: 21 Date: 9-6-91
 Direction: Southwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Drums containing unknown
 substances



Site: Enterprise Oil
 Photo No: 22 Date: 9-6-91
 Direction: West
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Far building , note debris
 and boiler.



Site: Enterprise Oil
 Photo No: 23 Date: 9-6-91
 Direction: Down
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Cylinder near boiler in far building.



Site: Enterprise Oil
 Photo No: 24 Date: 09/06/91
 Direction: West
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: West gate entrance off Lawton Street.



Site: Enterprise Oil
 Photo No: 25 Date: 8-21-91
 Direction: East
 Camera: OLYMPUS INFINITY 35mm
 Photographer: William Wilde
 Subject: Right, maintenance garage.
 Left, pump station.



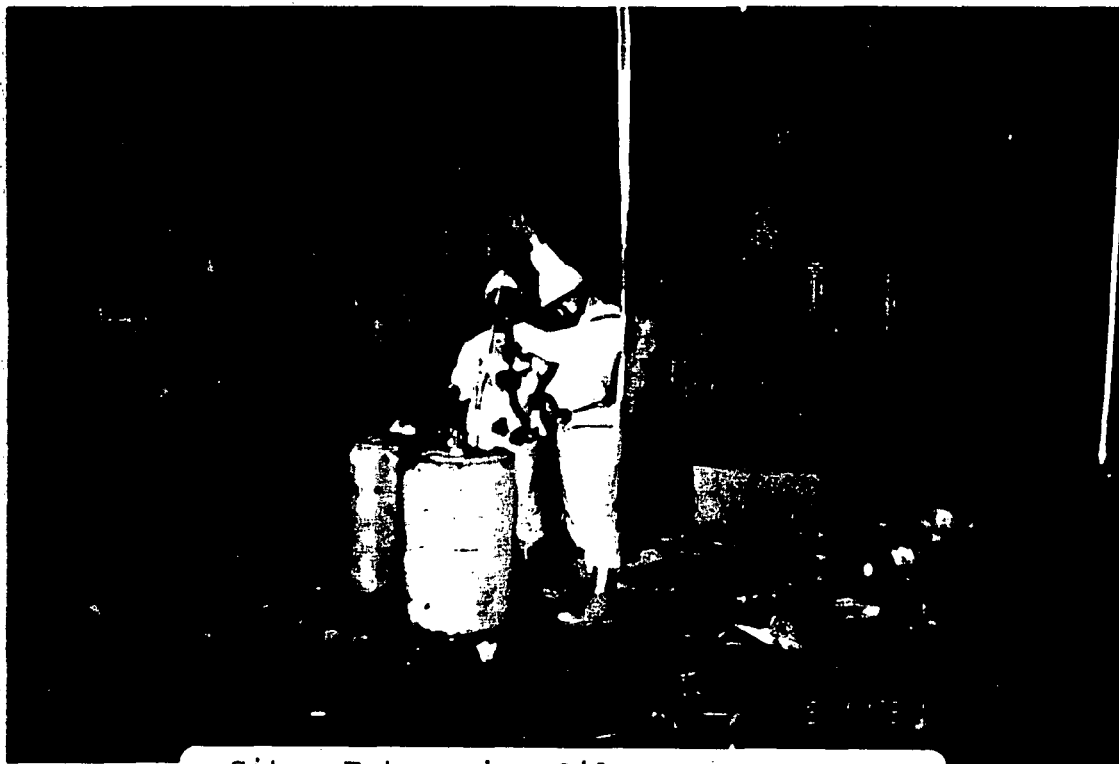
Site: Enterprise Oil
 Photo No: 26 Date: 09/09/91
 Direction: Northeast
 Camera: OLYMPUS INFINITY 35mm
 Photographer: B. Cadarin
 Subject: TAT B. Wilde collecting
 sample for field PCB test.



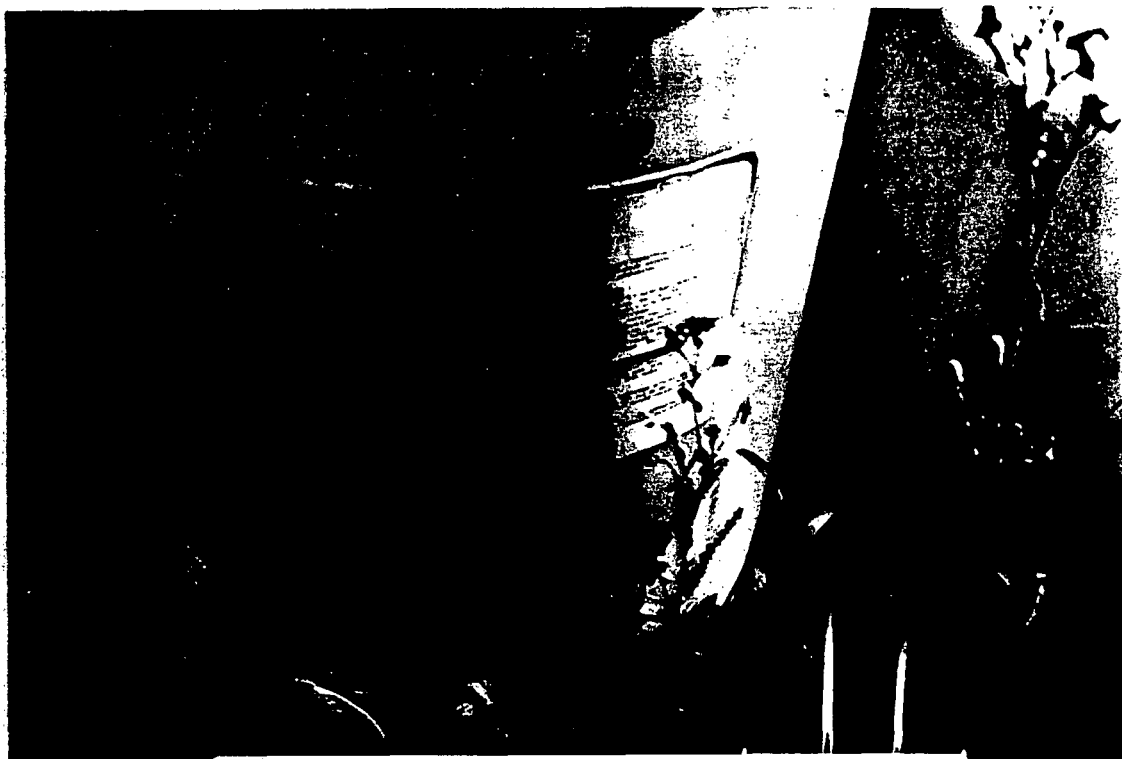
Site: Enterprise Oil
Photo No: 27 Date: 09/11/91
Direction: Northwest
Camera: OLYMPUS INFINITY 35mm
Photographer: P. Guria
Subject: HNU used to air monitor
bung hole opening.



Site: Enterprise Oil
Photo No: 28 Date: 09/11/91
Direction: South
Camera: OLYMPUS INFINITY 35mm
Photographer: P. Guria
Subject: TATs drum sample in
Level B protection.



Site: Enterprise Oil
Photo No: 29 Date: 09/11/91
Direction: Northwest
Camera: OLYMPUS INFINITY 35mm
Photographer: P. Guria
Subject: Poly drum sampled; note
debris & rubble nearby.



Site: Enterprise Oil
Photo No: 30 Date: 09/11/91
Direction: South
Camera: OLYMPUS INFINITY 35mm
Photographer: P. Guria
Subject: Close-up of suspect poly
drum with label intact.



Site: Enterprise Oil
Photo No: 31 Date: 09/11/91
Direction: East
Camera: OLYMPUS INFINITY 35mm
Photographer: P. Guria
Subject: Discovered overturned
drum; note black-gray powder.



Site: Enterprise Oil
Photo No: 32 Date: 09/11/91
Direction: Northeast
Camera: OLYMPUS INFINITY 35mm
Photographer: P. Guria
Subject: Initial OVA monitoring
of opened drum by TAT.



Site: Enterprise Oil
 Photo No: 33 Date: 9-11-91
 Direction: Northwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: Peter Guria
 Subject: Partial Flamm. label on
 drum; note rusted drum bottom.



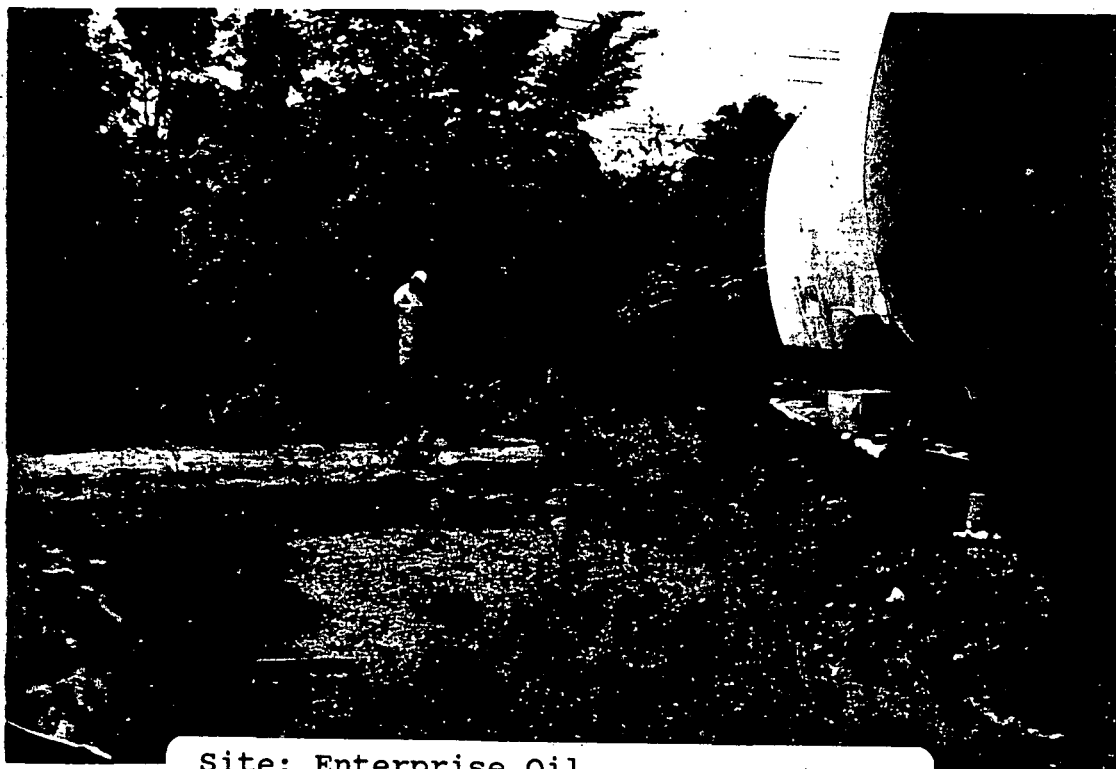
Site: Enterprise Oil
 Photo No: 34 Date: 09/11/91
 Direction: North
 Camera: OLYMPUS INFINITY 35mm
 Photographer: P. Guria
 Subject: Drum to be sampled in-
 dicated 100% LEL on the CGI.



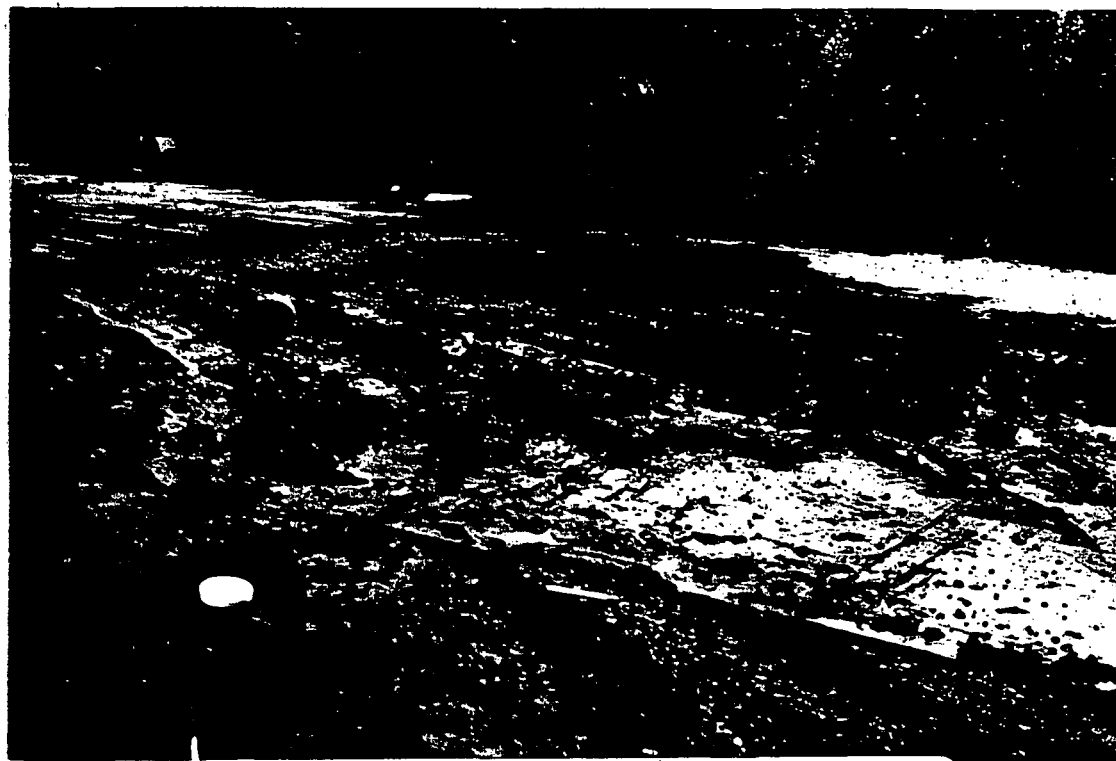
Site: Enterprise Oil
 Photo No: 35 Date: 09/11/91
 Direction: Southwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: P. Guria
 Subject: Overview of oil/water
 puddle; note stained area.



Site: Enterprise Oil
 Photo No: 36 Date: 09/11/91
 Direction: South
 Camera: OLYMPUS INFINITY 35mm
 Photographer: P. Guria
 Subject: Extent of oil spill
 residue on site grounds.



Site: Enterprise Oil
Photo No: 37 Date: 09/11/91
Direction: West
Camera: OLYMPUS INFINITY 35mm
Photographer: B. Cadarin
Subject: OSC P. Guria document-
ing site conditions.



Site: Enterprise Oil
Photo No: 38 Date: 09/11/91
Direction: Southwest
Camera: OLYMPUS INFINITY 35mm
Photographer: B. Cadarin
Subject: Soil sample #001; note
extent of oil contaminated area.



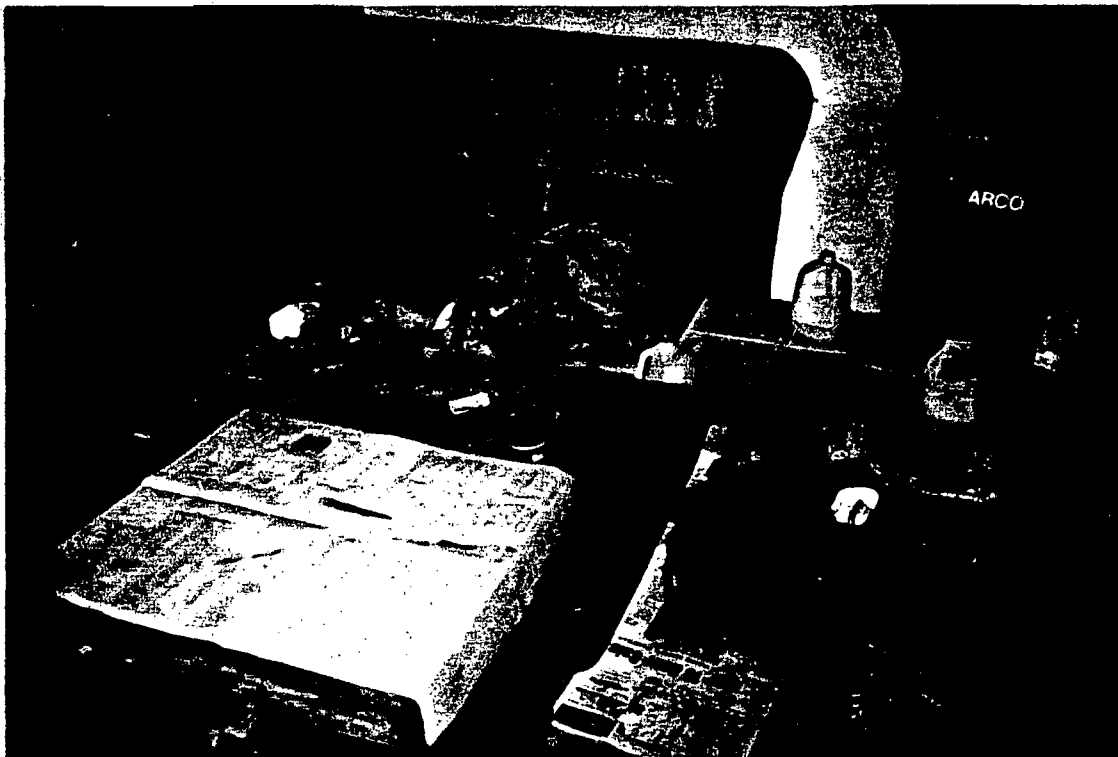
Site: Enterprise Oil
 Photo No: 39 Date: 09/11/91
 Direction: Northwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: B. Cadorin
 Subject: Soil sample #002; note
 gross oil contam. by RR tracks.



Site: Enterprise Oil
 Photo No: 40 Date: 09/11/91
 Direction: East
 Camera: OLYMPIC INFINITY 35mm
 Photographer: B. Cadorin
 Subject: Close-up of suspect
 asbestos source & sample jar.



Site: Enterprise Oil
 Photo No: 41 Date: 09/11/91
 Direction: East
 Camera: OLYMPUS INFINITY 35mm
 Photographer: B. Cadarin
 Subject: TAT D. Tesin in Level C
 exiting bldg. with asbestos sample.



Site: Enterprise Oil
 Photo No: 42 Date: 09/11/91
 Direction: Northwest
 Camera: OLYMPUS INFINITY 35mm
 Photographer: B. Cadarin
 Subject: On-site living quarters
 & belongings of a "street-person".

APPENDIX C
QA/QC DATA PACKAGE



ecology and environment, inc.

12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL. (313) 946-0900
International Specialists in the Environment

MEMORANDUM

Date: October 7, 1991

To: William P. Wilde, Project Manager, E & E, Detroit, MI

Thru: Jenniffer Shields, ATATL, E & E, Detroit, MI *JS*

From: *AUT* Andrea Urda-Thompson, TAT Chemist, E & E, Detroit, MI

Subj: Inorganic Data Quality Assurance Review
Enterprise Oil
Detroit, Wayne County, Michigan

Ref: Analytical TDD # T05-9109-806 Project TDD # T05-9108-017
Analytical PAN # EMI1259ABA Project PAN # EMI1259SAA

The data quality assurance review of six samples collected from the Enterprise Oil site in Detroit, Wayne County, Michigan has been completed. Analysis for Priority Pollutant (PP) total metals (U. S. EPA method SW846) was performed by Canton Analytical Lab. Attached please find a copy of the data package and a copy of the chain of custody.

The samples were numbered: S-78 through S-80 and S-82 through S-84.

Data Qualifications:

I. Sample Holding Time: Acceptable.

The PP total metals were analyzed within six months from the date of collection.

II. Method Blanks: Acceptable.

Method blanks were prepared and analyzed with each parameter. No contamination above the IDL was detected.

III. Matrix Spike Samples Analysis: Acceptable.

The spike recoveries for PP metals were reported within the control limits of 75-125%R, except for mercury which the lab reported diluted out and for selenium no recovery. No action taken based on spike samples alone.

IV. Matrix Duplicate: Acceptable.

All RPD for the laboratory duplicate samples fell within the control limits of $\pm 20\%$.

V. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in "Quality Assurance/Quality Control Guidance for Removal Activities" (April 1990) and "Laboratory Data Validation Functional Guidelines For Evaluating Inorganics Analyses", (July 1, 1988).

Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Definitions and Qualifiers

IDL - Instrument Detection Limit

ZR - Percent Recovery

RPD - Relative Percent Difference



ecology and environment, inc.

12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL. (313) 946-0900
International Specialists in the Environment

MEMORANDUM

Date: October 7, 1991

To: William P. Wilde, Project Manager, E & E, Detroit, MI

Thru: Jenniffier Shields, ATATL, E & E, Detroit, MI *J*

From: Andrea Urda-Thompson, ^{AVT}TAT Chemist, E & E, Detroit, MI

Subj: Organic Data Quality Assurance Review
Enterprise Oil
Detroit, Wayne County, Michigan

Ref: Analytical TDD # T05-9109-806. Project TDD # T05-9108-017
Analytical PAN # EMI1259ABA Project PAN # EMI1259SAA

The data quality assurance review of eight samples collected from the Enterprise Oil, located in Detroit, Wayne County, Michigan has been completed. Analysis for Volatile Organics Compounds (U. S. EPA method SW-846-8240), Semivolatiles (SW-846-8270), Pesticides and Polychlorinated Biphenyls (PCBs) (SW-846-8080), and Herbicides (SW-846-8150) was performed by Canton Analytical Lab. Attached please find a copy of the data package and the chain of custody. Note on the chain of custody that Don Tesin denoted parameters: 8240 and 8270 as due in one week verbal results.

The samples were numbered: S-78 through S-85.

Data Qualifications:

I. Sample Holding Time: Acceptable.

Volatile Organic Compounds were extracted and analyzed within fourteen days from the date of collection. Pesticides and PCBs, Herbicides, and Semivolatiles were extracted within seven days and analyzed within forty days from the date of extraction.

II. Matrix Spike Sample Analysis: Acceptable.

The reported ZRPD were within the advisory limits.

III. Matrix Duplicate Sample Analysis: Acceptable.

The reported results were within the advisory limits of $\pm 20\%R$.

IV. Overall Assessment of Data for Use

Overall usefulness of the data is based on the criteria outlined in "Quality Assurance/Quality Control Guidance for Removal Activities" (April 1990) and "Laboratory Data Validation Functional Guidelines For Evaluating Organics Analyses" (February 1, 1988).

Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Definitions

%R - Percent Recovery

IDL - Instrument Detection Limit

DL - Diluted out

%RSD - Percent Relative Standard Deviation

DATE	PARAMETER	METHOD STANDARD				SAMPLE #	MATRIX	UNITS	DILUTION FACTOR	DUPLICATION			SPIKE*			ANALYST'S INITIALS
		BLANK	TRUE CONC.	CONC. OBSERVED	% of TRUE					TRIAL #1	TRIAL #2	MEAN	FINAL SPIKE CONC.	OBSERVED CONC. OF SPIKE SAMPLE	% of SPIKE RECOVERED	
9-16	Be	<0.01	2.00	2.08	104	1090527	liquid	mg/kg	2g/100	< 0.50	< 0.50	< 0.50	100	98.5	98	CH
"	Cd	<0.01	"	2.13	106	"	"	"	"	< 0.50	< 0.50	< 0.50	100	102	102	"
"	Cr	<0.02	"	2.15	107	"	"	"	"	< 1.0	< 1.0	< 1.0	100	105	105	"
"	Cu	<0.02	"	2.10	105	"	"	"	"	< 1.0	< 1.0	< 1.0	100	101	101	"
"	Pb	<0.12	"	2.50	125	"	"	"	"	< 6.0	< 6.0	< 6.0	100	92.5	92	"
"	Ni	<0.04	"	2.03	101	"	"	"	"	< 2.0	< 2.0	< 2.0	100	97.5	98	"
"	Ag	<0.03	"	0.72	26	"	"	"	"	< 1.5	< 1.5	< 1.5	100	97	97	"
"	Tl	<0.36	"	2.08	104	"	"	"	"	< 18	< 18	< 18	100	97	97	"
"	Zn	<0.01	"	1.96	98	"	"	"	"	< 0.50	< 0.50	< 0.50	100	96.5	96	"
9-18	Hg	<0.0005	0.0010	0.0010	100	1090525	"	"	0.5g/60ml	< 0.05	< 0.05	< 0.05	0.0011	Diluted Out		"
9-21	Sb	<0.0030	0.050	0.041	72	1090527	"	"	2g/100	< 0.15	< -	< 0.15	2.5	2.3	92	"
"	Se	<0.0020	0.010	0.0033	33	"	"	"	"	< 0.10	< 0.10	< 0.10	0.50	0.10	0	"
"	As	0.0031	0.010	0.0089	89	"	"	"	"	< 0.10	< 0.10	< 0.10	0.50	0.33	66	"

*% of SPIKE RECOVERED = [(OBSERVED CONC. of SPIKE SAMPLE - MEAN)/(FINAL SPIKE CONC.)) X 100%

CHAIN OF CUSTODY RECORD

Results to:
A. V. Thompson
(313) 946-0900
TOS-9109-806/EMI 1259ABA
REMARKS

1 WEEK VERBAL
2 WEEK HARDCOPY

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File



ecology and environment, inc.

12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL. (313) 946-0900
International Specialists in the Environment

MEMORANDUM

DATE: October 7, 1991

TO: William P. Wilde, Project Manager, E & E, Taylor, MI

THRU: Jenniffer Shields, ATATL, E & E, Taylor, MI *J*

FROM: Andrea Urda-Thompson, TAT-Chemist, E & E, Taylor, MI *AUT*

SUBJ: Organic Data Quality Assurance Review
Enterprise Oil
Detroit, Wayne County, Michigan

REF: Analytical TDD# T05-9109-805 Project TDD# T05-9108-017
Analytical PAN# EMI1259AAA Project PAN#: EMI1259SAA

The data quality assurance review of four samples collected from the Enterprise Oil, located in Detroit, Wayne County, Michigan has been completed. Analysis for Polychlorinated biphenyls (PCBs) (SW-846-8080) was performed by Thermal Analytical Inc. Attached please find a copy of the data package and the chain of custody.

The samples were numbered: S-174 through S-177.

Data Qualifications:

I. Sample Holding Time: Acceptable.

The PCBs were extracted within seven days and analyzed within forty days from the date of extraction.

II. Matrix Duplicate/Matrix Spike Sample Analysis: Acceptable

The reported %RPD were within the advisory limits.

III. Method Blank: Acceptable.

Method blanks were prepared and analyzed for each compound. No contamination above the IDL was detected.

IV. Initial and Continuing Calibration: Acceptable.

The reported %D for PCB-1260 was greater than 15%, the advisory limit, since the samples were reported less than IDL, no action was taken.

V. Overall Assessment of Data for Use

Overall usefulness of the data is based on the criteria outlined in "Quality Assurance/Quality Control Guidance for Removal Activities" (April 1990) and "Laboratory Data Validation Functional Guidelines For Evaluating Organics Analyses" (February 1, 1988).

Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Definitions

%R- Percent Recovery

IDL - Instrument Detection Limit.

%D - Percent Deviation

%RSD - Percent Relative Standard Deviation

TMA

Thermo Analytical Inc.

Analytical Report

THERMO ANALYTICAL, INC. /ERG
525 AVIS DRIVE, SUITE 7
ANN ARBOR, MICHIGAN 48108

ATTN:
PHONE: (313) 662-3104

ECOLOGY & ENVIRONMENT
12251 UNIVERSAL
TAYLOR, MI. 48180

ATTN: ANDREA URDA-THOMPSON

PURCHASE ORDER: 69705
INVOICE NUMBER:

ORDER #: E1-09-025
DATE: 09/17/91 15:56
WORK ID: USEPA-RUSH
DATE RECEIVED: 09/10/91
DATE COMPLETED: 09/17/91

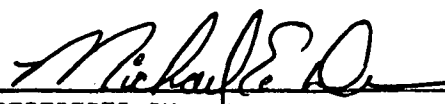
RECEIVED
JUN 10 1991
TAT MI-SAT

SAMPLE IDENTIFICATION

<u>SAMPLE NUMBER</u>	<u>SAMPLE DESCRIPTION</u>
01	S-174
03	S-176

<u>SAMPLE NUMBER</u>	<u>SAMPLE DESCRIPTION</u>
02	S-175
04	S-177

SR=SEE ATTACHED REPORT ND=NONDETECTED, DETECTION LIMIT
IS IN () C=COMPOUND OR ELEMENT WAS NOT DETECTED AT OR ABOVE
SPECIFIED DETECTION LIMIT IN () N/A=NOT APPLICABLE X=AVERAGE
OF DUPLICATE RUNS.


CERTIFIED BY

09/17/91 15:56

TEST RESULTS BY SAMPLE

SAMPLE: 01A S-174

COLLECTED:

<u>TEST DESCRIPTION</u>	<u>RESULT</u>	<u>LIMIT</u>	<u>UNITS</u>	<u>ANALYZED</u>	<u>BY</u>
PCB'S IN SOLID					
AROCHLOR 1016	<10		MG/KG	09/11/91	GH
AROCHLOR 1221	<10		MG/KG	09/11/91	GH
AROCHLOR 1232	<10		MG/KG	09/11/91	GH
AROCHLOR 1242	<10		MG/KG	09/11/91	GH
AROCHLOR 1248	<10		MG/KG	09/11/91	GH
AROCHLOR 1254	<10		MG/KG	09/11/91	GH
AROCHLOR 1260	<10		MG/KG	09/11/91	GH

SAMPLE: 02A S-175

COLLECTED:

<u>TEST DESCRIPTION</u>	<u>RESULT</u>	<u>LIMIT</u>	<u>UNITS</u>	<u>ANALYZED</u>	<u>BY</u>
PCB'S IN SOLID					
AROCHLOR 1016	<10		MG/KG	09/11/91	GH
AROCHLOR 1221	<10		MG/KG	09/11/91	GH
AROCHLOR 1232	<10		MG/KG	09/11/91	GH
AROCHLOR 1242	<10		MG/KG	09/11/91	GH
AROCHLOR 1248	<10		MG/KG	09/11/91	GH
AROCHLOR 1254	<10		MG/KG	09/11/91	GH
AROCHLOR 1260	<10		MG/KG	09/11/91	GH

SAMPLE: 03A S-176

COLLECTED:

<u>TEST DESCRIPTION</u>	<u>RESULT</u>	<u>LIMIT</u>	<u>UNITS</u>	<u>ANALYZED</u>	<u>BY</u>
PCB'S IN SOLID					
AROCHLOR 1016	<10		MG/KG	09/11/91	GH
AROCHLOR 1221	<10		MG/KG	09/11/91	GH
AROCHLOR 1232	<10		MG/KG	09/11/91	GH
AROCHLOR 1242	<10		MG/KG	09/11/91	GH
AROCHLOR 1248	<10		MG/KG	09/11/91	GH
AROCHLOR 1254	<10		MG/KG	09/11/91	GH
AROCHLOR 1260	<10		MG/KG	09/11/91	GH

SAMPLE: 04A S-177

COLLECTED:

<u>TEST DESCRIPTION</u>	<u>RESULT</u>	<u>LIMIT</u>	<u>UNITS</u>	<u>ANALYZED</u>	<u>BY</u>
PCB'S IN SOLID					
AROCHLOR 1016	<5.0		MG/KG	09/11/91	GH

TMA

Thermo Analytical Inc.

Analytical ReportORDER # E1-09-025
09/17/91 15:56

THERMO ANALYTICAL, INC. /ERG

PAGE 3

<u>TEST DESCRIPTION</u>	<u>RESULT</u>	<u>LIMIT</u>	<u>UNITS</u>	<u>ANALYZED</u>	<u>BY</u>
AROCHLOR 1221	<5.0		MG/KG	09/11/91	GH
AROCHLOR 1232	<5.0		MG/KG	09/11/91	GH
AROCHLOR 1242	<5.0		MG/KG	09/11/91	GH
AROCHLOR 1248	<5.0		MG/KG	09/11/91	GH
AROCHLOR 1254	<5.0		MG/KG	09/11/91	GH
AROCHLOR 1260	<5.0		MG/KG	09/11/91	GH

TMA/ERG

525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

QUALITY CONTROL REPORT
MATRIX SPIKE /MATRIX SPIKE DUPLICATE ANALYSIS

Client: Ecology and Environment
12251 Universal
Taylor, MI. 48180

Date: 18-Sep-91
Project: E1-09-025
Sample Nos.: S174-S176

Attn: Andrea Urda-Thompson

Approved: *Mark Krue*

QA/QC MANAGER

PARAMETER	SAMPLE NUMBER	SAMPLE RESULT	SPIKE ADDED	SPIKED SAMPLE	% REC.	SPIKE ADDED	DUP SAMPLE	SPIKED DUF. REC.	% RFD
		mg/kg	mg/kg	mg/kg		mg/kg	mg/kg		
PCB-1260	S176	<10	5.0	6.4	128%	5.0	5.1	102%	22.6%
PCB-1260	CS	-----	5.0	1.3	26%	-----	-----	-----	-----
PCB-1260	MB	<0.020	-----	-----	-----	-----	-----	-----	-----

COMMENTS:

TMA

Thermo Analytical Inc.

TMA/ERG

525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

QUALITY CONTROL REPORT MATRIX SPIKE /MATRIX SPIKE DUPLICATE ANALYSIS

Client: Ecology and Environment
12251 Universal
Taylor, MI. 48180

Date: 18-Sep-91
Project: E1-09-025
Sample Nos.: S177

Attn: Andrea Urda-Thompson

Approved:

Mark Rove
QA/QC MANAGER

PARAMETER	SAMPLE NUMBER	SAMPLE RESULT	SPIKE ADDED	SPIKED SAMPLE	% REC.	SPIKE ADDED	DUP SAMPLE	SPIKED SAMPLE	DUP. % REC.	% RPD
		mg/kg	mg/kg	mg/kg		mg/kg	mg/kg			
PCB-1260	09013*	<5.0	3.6	2.5	69%	3.8	2.3	61%	8.3%	
PCB-1260	CS	-----	0.17	0.13	76%	-----	-----	-----	-----	
PCB-1260	MB	<0.020	-----	-----	-----	-----	-----	-----	-----	

COMMENTS: *MS and MSD done on another sample in same analytical batch.
Sample extracted on 09-10-91 by A. Grims and analyzed on 09-12-91 by
Method 8080 by G. Hughes.

CALIBRATION DATA -- PCB'S

PROJECT #: E1-09-025

ANALYSIS DATE: 9/11/91

CLINET: ECOLOGY & ENVIRONMENT

	*	INITIAL CF+*	FINAL CF+*	%D	*
PCB-1221	*	3.04E-05	2.78E-05	9.54%	*
PCB-1232	*	1.85E-05	1.61E-05	12.97%	*
PCB-1216	*	5.27E-06	5.05E-06	4.17%	*
PCB-1242	*	9.38E-06	8.27E-06	11.83%	*
PCB-1248	*	6.14E-06	5.35E-06	12.87%	*
PCB-1254	*	3.65E-06	2.89E-06	20.82%	*
PCB-1260	*	4.02E-06	2.64E-06	34.33%	*

+ CF = CALIBRATION FACTOR

PCB's in soil

TEST CODE:

[illegible]

DATA SUMMARY SHEET.
PCB's... in oil

PROJECT NO.: E109025

TEST CODE:

[illegible]

PAGE 5
RECEIVED: 09/10/91

tma/erg
PCB_S RESULTS BY FRACTION

DATA SHEET

ORD # E1-09-025-OR

DASH 04A SAMPLE ID S-177 STORED : COC-M TEST PCB's in Solid
DATE and TIME COLLECTED

EXTRACTED 9/10/91
DATE RUN 9/12/91
ANALYST CH
UNITS mg/kg

PARAMETER	RESULT
Aroclor 1016	< 5.0
Aroclor 1221	
Aroclor 1232	
Aroclor 1242	
Aroclor 1248	
Aroclor 1254	
Aroclor 1260	↓

AGE 4
RECEIVED: 09/10/91

taa/erg
PCB S RESULTS BY FRACTION

DATA SHEET

ORD # E1-09-025-OR

ASH 01A SAMPLE ID S-174

STORED COC-M

TEST PCB's in ~~SOL~~ OIL

DATE and TIME COLLECTED

EXTRACTED 9/10/91
DATE RUN 9/11/91
ANALYST GH
UNITS mg/kg

PARAMETER	RESULT
Arochlor 1016	<10
Arochlor 1221	
Arochlor 1232	
Arochlor 1242	
Arochlor 1248	
Arochlor 1254	
Arochlor 1260	↓

ASH 02A SAMPLE ID S-175

STORED COC-M

TEST PCB's in ~~SOL~~ OIL

DATE and TIME COLLECTED

EXTRACTED 9/10/91
DATE RUN 9/11/91
ANALYST GH
UNITS mg/kg

PARAMETER	RESULT
Arochlor 1016	<10
Arochlor 1221	
Arochlor 1232	
Arochlor 1242	
Arochlor 1248	
Arochlor 1254	
Arochlor 1260	↓

PAGE 6
RECEIVED: 09/10/91

tea/erg
PCB_M RESULTS BY FRACTION

ORD # E1-09-025-OR

WASH 03A SAMPLE ID S-176 STORED COC-M TEST PCB's in ~~Water~~ oil
DATE and TIME COLLECTED

EXTRACTED 9/10/91
DATE RUN 9/11/91
ANALYST GH
UNITS mg/kg

PARAMETER	RESULT
Arochlor 1016	<u><10</u>
Arochlor 1221	<u> </u>
Arochlor 1232	<u> </u>
Arochlor 1242	<u> </u>
Arochlor 1248	<u> </u>
Arochlor 1254	<u> </u>
Arochlor 1260	<u>↓</u>

Office of Enforcement

**230 South Dearborn Street
Chicago, Illinois 60604**

CHAIN OF CUSTODY RECORD

PROJ. NO. 91E001 ZT1051		PROJECT NAME Detroit TAT		NO. OF CON- TAINERS		REMARKS	
SAMPLERS: (Signature) William W. Wille				STATION LOCATION		Date: Shipped: 9-10-91 Carrier: AUT	
STA. NO.	DATE 1991	TIME	COMP.	GRAB	STATION LOCATION	Sample Tag #	REMARKS
S-174	9-9	1630	X		Ditch N. of Tracks	119321	
S-175	9-9	1640	X		South of Tracks, Source	119322	
S-176	9-9	1650	X		Liquid inside Borma	119323	
S-177	9-9	1700	X		Solid inside Borma	119324	
						Sample may contain PCBs, D.L. 50ppm	
						48 HRS. TURNAROUND 9.12.91	
						Hard Copy due 9.18.91	
						P.O. # 69705	
Relinquished by: (Signature) Robert J. Ladd		Date / Time 9-10-91 / 1430		Received by: (Signature) Andrea Lida-Thompson		Relinquished by: (Signature) Andrea Lida-Thompson	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature) Christine Pardo		Date / Time 9-10-91 / 1600	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Remarks THERMAL ANALYTICAL, INC 525 AVIS DR, SUITE 7 ANN ARBOR, MI 48108 CONTACT: MIKE DEW (313) 315-3104	

5- 03225

CAL

Canton Analytical Laboratory, Inc.
ENVIRONMENTAL ANALYSIS

October 02, 1991

ECOLOGY & ENVIRONMENT, INC.
12251 Universal
Taylor, MI 48180

RECEIVED

03

TAT MI-SAT

ATTENTION: Ms. Andrea Urda-Thompson

RE: CAL Report #14815
8 samples picked up 09/12/91


Dear Ms. Urda-Thompson:

The samples we received from you have been analyzed as requested. The results are compiled in the enclosed report.

It is a pleasure to be of assistance to you. Please contact us if you have questions concerning any aspect of this work.

Sincerely,

CANTON ANALYTICAL LABORATORY, INC.


Eric Flora
QA/QC Coordinator

EF/wh

ECOLOGY AND ENVIRONMENT, INC.
CAL REPORT# 14815

SAMPLE RECEIVED 09/12/91

PAGE 1

LAB# 1090524 PROJECT #91EE02 S-78 D001

ANALYTICAL
RESULTS
mg/kg

Flash Point, Deg. F 80-85 *Y

METALS 13 CPDS

Antimony, Total < 0.15

Arsenic, Total < 0.10

Beryllium, Total < 0.50

Cadmium, Total < 0.50

Chromium, Total < 1.0

Copper, Total < 1.0

Lead, Total < 6.0

Mercury, Total < 0.006

Nickel, Total < 2.0

Selenium, Total < 0.10

Silver, Total < 1.5

Thallium, Total < 18

Zinc, Total < 0.50

8240 VOLATILES, GC/MS

Chloromethane < 25

Bromomethane < 25

Vinyl Chloride < 25

Chloroethane < 25

Methylene Chloride < 25

Acetone < 100

Carbon Disulfide < 25

*YES/NO, CAPACITY TO SUSTAIN
BURNING AFTER BEING FLAMED.

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LAB# 1090524 PROJECT #91EE02 S-78 D001

ANALYTICAL
RESULTS
mg/kg

1,1-Dichloroethene	< 25
1,1-Dichloroethane	< 25
trans-1,2-Dichloroethene	< 25
Chloroform	< 25
1,2-Dichloroethane	< 25
2-Butanone	< 100
1,1,1-Trichloroethane	< 25
Carbon Tetrachloride	< 25
Bromodichloromethane	< 25
1,2-Dichloropropane	< 25
trans-1,3-Dichloropropene	< 25
Trichloroethene	< 25
Dibromochloromethane	< 25
1,1,2-Trichloroethane	< 25
Benzene	30
cis-1,3-Dichloropropene	< 25
Bromoform	< 25
2-Hexanone	< 50
4-Methyl-2-Pentanone	< 50
Tetrachloroethene	< 25
1,1,2,2-Tetrachloroethane	< 25
Toluene	500
Chlorobenzene	< 25

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LAB# 1090524 PROJECT #91EE02 S-78 D001

ANALYTICAL
RESULTS
mg/kg

Ethylbenzene	930
Styrene	< 25
mp-Xylene	2200
o-Xylene	< 25
cis-1,2-Dichloroethene	< 25
1,2-Dichlorobenzene	< 25
1,3-Dichlorobenzene	< 25
1,4-Dichlorobenzene	< 25
8270 SEMI-VOLATILES, GC/MS	
N-Nitrosodimethylamine	< 50
Phenol	< 50
Aniline	< 100
Bis(2-Chloroethyl) Ether	< 50
2-Chlorophenol	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50
Benzyl Alcohol	< 100
1,2-Dichlorobenzene	< 50
2-Methylphenol	< 50
Bis(2-Chloroisopropyl) Ether	< 50
4-Methylphenol	< 50
N-Nitroso-Di-N-Propylamine	< 50
Hexachloroethane	< 50

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LAB# 1090524 PROJECT #91EE02 S-78 D001

ANALYTICAL
RESULTS
mg/kg

Nitrobenzene	< 50
Isophorone	< 50
2-Nitrophenol	< 50
2,4-Dimethylphenol	< 50
Bis(2-Chloroethoxy) Methane	< 50
Benzoic Acid	< 100
2,4-Dichlorophenol	< 50
1,2,4-Trichlorobenzene	< 50
Naphthalene	2700
4-Chloroaniline	< 100
Hexachlorobutadiene	< 50
4-Chloro-3-Methylphenol	< 100
2-Methylnapthalene	1800
Hexachlorocyclopentadiene	< 50
2,4,6-Trichlorophenol	< 50
2,4,5-Trichlorophenol	< 50
2-Chloronaphthalene	< 50
2-Nitroaniline	< 150
Dimethyl Phthalate	< 50
2,6-Dinitrotoluene	< 50
Acenaphthylene	< 50
3-Nitroaniline	< 150
Acenaphthene	< 50

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LAB# 1090524 PROJECT #91EE02 S-78 D001

ANALYTICAL
RESULTS
mg/kg

2,4-Dinitrophenol	< 100
4-Nitrophenol	< 100
Dibenzofuran	290
2,4-Dinitrotoluene	< 50
Diethyl Phthalate	< 50
Fluorene	< 50
4-Nitroaniline	< 150
2-Methyl-4,6-Dinitrophenol	< 100
N-Nitrosodiphenylamine	< 50
Azobenzene	< 50
4-Bromophenyl Phenyl Ether	< 50
Hexachlorobenzene	< 50
Pentachlorophenol	< 100
Phenanthrene	76
Anthracene	< 50
Di-n-butyl Phthalate	< 50
Fluoranthene	< 50
Pyrene	< 50
Butyl Benzyl Phthalate	< 50
Benzo(a)anthracene	< 50
Chrysene	< 50
Bis(2-Ethylhexyl) Phthalate	< 50
Di-n-octyl Phthalate	< 50

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LAB# 1090524 PROJECT #91EE02 S-78 D001

ANALYTICAL
RESULTS
mg/kg

Benzo(b)fluoranthene	< 50
Benzo(k)fluoranthene	< 50
Benzo(a)pyrene	< 50
3,3'-Dichlorobenzidine	< 100
Indeno(1,2,3-cd)pyrene	< 50
Dibenzo(a,h)anthracene	< 50
Benzo(ghi)perylene	< 50

PESTICIDES

alpha-BHC	< 0.02
beta-BHC	< 0.10
gamma-BHC (Lindane)	< 0.06
Heptachlor	< 0.04
delta-BHC	< 0.50
Aldrin	< 0.30
Heptachlor Epoxide	< 0.08
alpha-Endosulfan	< 0.04
4,4'-DDE	< 0.04
Dieldrin	< 0.04
Endrin	< 0.04
4,4'-DDD	< 0.06
beta-Endosulfan	< 0.04
4,4'-DDT	< 0.05
Endrin Aldehyde	< 0.05

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LAB# 1090524 PROJECT #91EE02 S-78 D001

ANALYTICAL
RESULTS
mg/kg

Endosulfan Sulfate < 0.05

Chlordane < 0.20

Toxaphene < 2.0

HERBICIDES

2,4-D < 0.03

2,4,5-TP (Silvex) < 0.02

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LAB# 1090525 PROJECT #91EE02 S-79 D002

ANALYTICAL
RESULTS
mg/kg

Flash Point, Deg. F > 200 *Y

METALS 13 CPDS

Antimony, Total < 0.30

Arsenic, Total < 0.10

Beryllium, Total < 0.50

Cadmium, Total < 0.50

Chromium, Total < 1.0

Copper, Total < 1.0

Lead, Total < 6.0

Mercury, Total < 0.05

Nickel, Total < 2.0

Selenium, Total < 0.10

Silver, Total < 1.5

Thallium, Total < 18

Zinc, Total < 0.50

8240 VOLATILES, GC/MS

Chloromethane < 0.50

Bromomethane < 0.50

Vinyl Chloride < 0.50

Chloroethane < 0.50

Methylene Chloride 2.7

Acetone 1.8

Carbon Disulfide < 0.50

S-79

Flash Point > 200°F

	mg/kg
Methylene Chloride	2.7
Acetone	1.8
Chloroform	1.0
2-Butanone	2.6

*YES/NO, CAPACITY TO SUSTAIN
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LAB# 1090525 PROJECT #91EE02 S-79 D002

ANALYTICAL
RESULTS
mg/kg

1,1-Dichloroethene	< 0.50
1,1-Dichloroethane	< 0.50
trans-1,2-Dichloroethene	< 0.50
Chloroform	1.0
1,2-Dichloroethane	< 0.50
2-Butanone	2.6
1,1,1-Trichloroethane	< 0.50
Carbon Tetrachloride	< 0.50
Bromodichloromethane	< 0.50
1,2-Dichloropropane	< 0.50
trans-1,3-Dichloropropene	< 0.50
Trichloroethene	< 0.50
Dibromochloromethane	< 0.50
1,1,2-Trichloroethane	< 0.50
Benzene	< 0.50
cis-1,3-Dichloropropene	< 0.50
Bromoform	< 0.50
2-Hexanone	< 0.50
4-Methyl-2-Pentanone	< 0.50
Tetrachloroethene	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50
Toluene	< 0.50
Chlorobenzene	< 0.50

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LAB# 1090525 PROJECT #91EE02 S-79 D002

ANALYTICAL
RESULTS
mg/kg

Ethylbenzene < 0.50

Styrene < 0.50

mp-Xylene < 0.50

o-Xylene < 0.50

cis-1,2-Dichloroethene < 0.50

1,2-Dichlorobenzene < 0.50

1,3-Dichlorobenzene < 0.50

1,4-Dichlorobenzene < 0.50

8270 SEMI-VOLATILES, GC/MS

N-Nitrosodimethylamine < 2.5

Phenol < 2.5

Analine < 5.0

Bis(2-Chloroethyl) Ether < 2.5

2-Chlorophenol < 2.5

1,3-Dichlorobenzene < 2.5

1,4-Dichlorobenzene < 2.5

Benzyl Alcohol < 2.5

1,2-Dichlorobenzene < 2.5

2-Methylphenol < 2.5

Bis(2-Chloroisopropyl) Ether < 2.5

4-Methylphenol < 2.5

N-Nitroso-Di-N-Propylamine < 2.5

Hexachloroethane < 2.5

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LAB# 1090525 PROJECT #91EE02 S-79 D002

ANALYTICAL
RESULTS
mg/kg

Nitrobenzene	< 2.5
Isophorone	< 2.5
2-Nitrophenol	< 2.5
2,4-Dimethylphenol	< 2.5
Bis(2-Chloroethoxy) Methane	< 2.5
Benzoic Acid	< 5.0
2,4-Dichlorophenol	< 2.5
1,2,4-Trichlorobenzene	< 2.5
Naphthalene	< 2.5
4-Chloroaniline	< 5.0
Hexachlorobutadiene	< 2.5
4-Chloro-3-Methylphenol	< 5.0
2-Methylnaphthalene	< 2.5
Hexachlorocyclopentadiene	< 2.5
2,4,6-Trichlorophenol	< 2.5
2,4,5-Trichlorophenol	< 2.5
2-Chloronaphthalene	< 2.5
2-Nitroaniline	< 10
Dimethyl Phthalate	< 2.5
2,6-Dinitrotoluene	< 2.5
Acenaphthylene	< 2.5
3-Nitroaniline	< 10
Acenaphthene	< 2.5

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LAB# 1090525 PROJECT #91EE02 S-79 D002

ANALYTICAL
RESULTS
mg/kg

2,4-Dinitrophenol	< 5.0
4-Nitrophenol	< 5.0
Dibenzofuran	< 2.5
2,4-Dinitrotoluene	< 2.5
Diethyl Phthalate	< 2.5
Fluorene	< 2.5
4-Nitroaniline	< 10
2-Methyl-4,6-Dinitrophenol	< 5.0
N-Nitrosodiphenylamine	< 2.5
Azobenzene	< 2.5
4-Bromophenyl Phenyl Ether	< 2.5
Hexachlorobenzene	< 2.5
Pentachlorophenol	< 5.0
Phenanthrene	< 2.5
Anthracene	< 2.5
Di-n-butyl Phthalate	< 2.5
Fluoranthene	< 2.5
Pyrene	< 2.5
Butyl Benzyl Phthalate	< 2.5
Benzo(a)anthracene	< 2.5
Chrysene	< 2.5
Bis(2-Ethylhexyl) Phthalate	< 2.5
Di-n-octyl Phthalate	< 2.5

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LAB# 1090525 PROJECT #91EE02 S-79 D002

ANALYTICAL
RESULTS
mg/kg

Benzo(b) fluoranthene	< 2.5
Benzo(k) fluoranthene	< 2.5
Benzo(a) pyrene	< 2.5
3,3'-Dichlorobenzidine	< 5.0
Indeno(1,2,3-cd) pyrene	< 2.5
Dibenzo(a,h) anthracene	< 2.5
Benzo(ghi) perylene	< 2.5

PESTICIDES

alpha-BHC	< 0.06
beta-BHC	< 0.06
gamma-BHC (Lindane)	< 0.04
Heptachlor	< 0.02
delta-BHC	< 0.08
Alin	< 0.06
Heptachlor Epoxide	< 0.08
alpha-Endosulfan	< 0.08
4,4'-DDE	< 0.10
Dieldrin	< 0.10
Endrin	< 0.10
4,4'-DDD	< 0.10
beta-Endosulfan	< 0.10
4,4'-DDT	< 0.20
Endrin Aldehyde	< 0.10

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LAB# 1090525 PROJECT #91EE02 S-79 D002

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ANALYTICAL
RESULTS
mg/kg

Endosulfan Sulfate < 0.10

Chlordane < 0.8

Toxaphene < 8.0

HERBICIDES

2,4-D < 0.03

2,4,5-TP (Silvex) < 0.02

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LAB# 1090526 PROJECT #91EE02 S-80 D003

ANALYTICAL
RESULTS
mg/kg

Flash Point, Deg. F > 200 *Y

METALS 13 CPDS

Antimony, Total < 0.15

Arsenic, Total 0.26

Beryllium, Total < 0.50

Cadmium, Total < 0.50

Chromium, Total < 1.0

Copper, Total 1.2

Lead, Total < 6.0

Mercury, Total < 0.05

Nickel, Total < 2.0

Selenium, Total < 0.10

Silver, Total < 1.5

Thallium, Total < 18

Zinc, Total < 0.5

8240 VOLATILES, GC/MS

Chloromethane < 0.010

Bromomethane < 0.010

Vinyl Chloride < 0.010

Chloroethane < 0.010

Methylene Chloride < 0.010

Acetone 0.24

Carbon Disulfide < 0.010

S-80
Flash Point > 200°F

mg/kg
Total Copper 1.2
Pyrene 130
Chrysene 190

*YES/NO, CAPACITY TO SUSTAIN
BURNING AFTER BEING FLAMED.

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LAB# 1090526 PROJECT #91EE02 S-80 D003

ANALYTICAL
RESULTS
mg/kg

1,1-Dichloroethene	< 0.010
1,1-Dichloroethane	< 0.010
trans-1,2-Dichloroethene	< 0.010
Chloroform	< 0.010
1,2-Dichloroethane	< 0.010
2-Butanone	< 0.10
1,1,1-Trichloroethane	< 0.010
Carbon Tetrachloride	< 0.010
Bromodichloromethane	< 0.010
1,2-Dichloropropane	< 0.010
trans-1,3-Dichloropropene	< 0.010
Trichloroethene	< 0.010
Dibromochloromethane	< 0.010
1,1,2-Trichloroethane	< 0.010
Benzene	< 0.010
cis-1,3-Dichloropropene	< 0.010
Bromoform	< 0.010
2-Hexanone	< 0.050
4-Methyl-2-Pentanone	0.076
Tetrachloroethene	< 0.010
1,1,2,2-Tetrachloroethane	< 0.010
Toluene	0.014
Chlorobenzene	< 0.010

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LAB# 1090526 PROJECT #91EE02 S-80 D003

ANALYTICAL
RESULTS
mg/kg

Ethylbenzene	< 0.010
Styrene	< 0.010
mp-Xylene	0.025
o-Xylene	0.019
cis-1,2-Dichloroethene	< 0.010
1,2-Dichlorobenzene	< 0.010
1,3-Dichlorobenzene	< 0.010
1,4-Dichlorobenzene	< 0.010

8270 SEMI-VOLATILES, GC/MS

N-Nitrosodimethylamine	< 50
Phenol	< 50
Aniline	< 100
Bis(2-Chloroethyl) Ether	< 50
2-Chlorophenol	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50
Benzyl Alcohol	< 100
1,2-Dichlorobenzene	< 50
2-Methylphenol	< 50
Bis(2-Chloroisopropyl) Ether	< 50
4-Methylphenol	< 50
N-Nitroso-Di-N-Propylamine	< 50
Hexachloroethane	< 50

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LAB# 1090526 PROJECT #91EE02 S-80 D003

ANALYTICAL
RESULTS
mg/kg

Nitrobenzene	< 50
Isophorone	< 50
2-Nitrophenol	< 50
2,4-Dimethylphenol	< 50
Bis(2-Chloroethoxy) Methane	< 50
Benzoic Acid	< 100
2,4-Dichlorophenol	< 50
1,2,4-Trichlorobenzene	< 50
Naphthalene	< 50
4-Chloroaniline	< 50
Hexachlorobutadiene	< 50
4-Chloro-3-Methylphenol	< 100
2-Methylnaphthalene	< 50
Hexachlorocyclopentadiene	< 50
2,4,6-Trichlorophenol	< 50
2,4,5-Trichlorophenol	< 50
2-Chloronaphthalene	< 50
2-Nitroaniline	< 150
Dimethyl Phthalate	< 50
2,6-Dinitrotoluene	< 50
Acenaphthylene	< 50
3-Nitroaniline	< 150
Acenaphthene	< 50

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LAB# 1090526 PROJECT #91EE02 S-80 D003

	ANALYTICAL RESULTS mg/kg
2,4-Dinitrophenol	< 100
4-Nitrophenol	< 100
Dibenzofuran	< 50
2,4-Dinitrotoluene	< 50
Diethyl Phthalate	< 50
Fluorene	< 50
4-Nitroaniline	< 150
2-Methyl-4,6-Dinitrophenol	< 100
N-Nitrosodiphenylamine	< 50
Azobenzene	< 50
4-Bromophenyl Phenyl Ether	< 50
Hexachlorobenzene	< 50
Pentachlorophenol	< 100
Phenanthrene	< 50
Anthracene	< 50
Di-n-butyl Phthalate	< 50
Fluoranthene	< 50
Pyrene	130
Butyl Benzyl Phthalate	< 50
Benzo(a)anthracene	< 50
Chrysene	190
Bis(2-Ethylhexyl) Phthalate	< 50
Di-n-octyl Phthalate	< 50

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LAB# 1090526 PROJECT #91EE02 S-80 D003

ANALYTICAL
RESULTS
mg/kg

Benzo(b)fluoranthene	< 50
Benzo(k)fluoranthene	< 50
Benzo(a)pyrene	< 50
3,3'-Dichlorobenzidine	< 100
Indeno(1,2,3-cd)pyrene	< 50
Dibenzo(a,h)anthracene	< 50
Benzo(ghi)perylene	< 50

PESTICIDES

alpha-BHC	< 0.20
beta-BHC	< 0.06
gamma-BHC (Lindane)	< 0.20
Heptachlor	< 0.20
delta-BHC	< 0.40
Aldrin	< 0.08
Heptachlor Epoxide	< 0.30
alpha-Endosulfan	< 0.30
4,4'-DDE	< 0.20
Dieldrin	< 0.20
Endrin	< 0.20
4,4'-DDD	< 0.20
beta-Endosulfan	< 0.20
4,4'-DDT	< 0.20
Endrin Aldehyde	< 0.20

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LAB# 1090526 PROJECT #91EE02 S-80 D003

ANALYTICAL
RESULTS
mg/kg

Endosulfan Sulfate < 0.10

Chlordane < 1.0

Toxaphene < 10

HERBICIDES

2,4-D < 0.08

2,4,5-TP (Silvex) < 0.06

PCB'S BY AROCHLOR

PCB-1016 < 2.0

PCB-1221 < 2.0

PCB-1232 < 2.0

PCB-1242 < 2.0

PCB-1248 < 2.0

PCB-1254 < 2.0

PCB-1260 < 2.0

PCB-1262 < 2.0

PCB, Total < 2.0

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LAB# 1090527 PROJECT #91EE02 S-81 D004

ANALYTICAL
S-81

Flash Point 70-75°F

Flash Point, Deg. F

8240 VOLATILES, GC/MS

Chloromethane

Bromomethane

Vinyl Chloride

Chloroethane

Methylene Chloride

Acetone

Carbon Disulfide

1,1-Dichloroethene

1,1-Dichloroethane

trans-1,2-Dichloroethene

Chloroform

1,2-Dichloroethane

2-Butanone

1,1,1-Trichloroethane

Carbon Tetrachloride

Bromodichloromethane

1,2-Dichloropropane

trans-1,3-Dichloropropene

Trichloroethene

Dibromochloromethane

1,1,2-Trichloroethane

mg/kg
Methylene Chloride 1.5
Acetone 1.8
2-Butanone 1.7

1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

1.7

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

*YES/NO, CAPACITY TO SUSTAIN
BURNING AFTER BEING FLAMED.

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LAB# 1090527 PROJECT #91EE02 S-81 D004

ANALYTICAL
RESULTS
mg/kg

Benzene	< 1.0
cis-1,3-Dichloropropene	< 1.0
Bromoform	< 1.0
2-Hexanone	< 1.0
4-Methyl-2-Pentanone	< 1.0
Tetrachloroethene	< 1.0
1,1,2,2-Tetrachloroethane	< 1.0
Toluene	< 1.0
Chlorobenzene	< 1.0
Ethylbenzene	< 1.0
Styrene	< 1.0
mp-Xylene	< 1.0
o-Xylene	< 1.0
c-1,2-Dichloroethene	< 1.0
1,2-Dichlorobenzene	< 1.0
1,3-Dichlorobenzene	< 1.0
1,4-Dichlorobenzene	< 1.0

8270 SEMI-VOLATILES, GC/MS

N-Nitrosodimethylamine	< 1.5
Phenol	< 1.5
Aniline	< 1.5
Bis(2-Chloroethyl) Ether	< 1.5
2-Chlorophenol	< 1.5

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LAB# 1090527 PROJECT #91EE02 S-81 D004

ANALYTICAL
RESULTS
mg/kg

1,3-Dichlorobenzene	< 1.5
1,4-Dichlorobenzene	< 1.5
Benzyl Alcohol	< 3.0
1,2-Dichlorobenzene	< 1.5
2-Methylphenol	< 1.5
Bis(2-Chloroisopropyl) Ether	< 1.5
4-Methylphenol	< 1.5
N-Nitroso-Di-N-Propylamine	< 1.5
Hexachloroethane	< 1.5
Nitrobenzene	< 1.5
Isophorone	< 1.5
2-Nitrophenol	< 1.5
2,4-Dimethylphenol	< 1.5
Bis(2-Chloroethoxy) Methane	< 1.5
Benzoic Acid	< 3.0
2,4-Dichlorophenol	< 1.5
1,2,4-Trichlorobenzene	< 1.5
Naphthalene	< 1.5
4-Chloroaniline	< 3.0
Hexachlorobutadiene	< 1.5
4-Chloro-3-Methylphenol	< 3.0
2-Methylnapthalene	< 1.5
Hexachlorocyclopentadiene	< 1.5

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LAB# 1090527 PROJECT #91EE02 S-81 D004

ANALYTICAL
RESULTS
mg/kg

2,4,6-Trichlorophenol	< 1.5
2,4,5-Trichlorophenol	< 1.5
2-Chloronaphthalene	< 1.5
2-Nitroaniline	< 5.0
Dimethyl Phthalate	< 1.5
2,6-Dinitrotoluene	< 1.5
Acenaphthylene	< 1.5
3-Nitroaniline	< 5.0
Acenaphthene	< 1.5
2,4-Dinitrophenol	< 3.0
4-Nitrophenol	< 3.0
Dibenzofuran	< 1.5
2,4-Dinitrotoluene	< 1.5
Diethyl Phthalate	< 1.5
Fluorene	< 1.5
4-Nitroaniline	< 5.0
2-Methyl-4,6-Dinitrophenol	< 3.0
N-Nitrosodiphenylamine	< 1.5
Azobenzene	< 1.5
4-Bromophenyl Phenyl Ether	< 1.5
Hexachlorobenzene	< 1.5
Pentachlorophenol	< 3.0
Phenanthrene	< 1.5

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LAB# 1090527 PROJECT #91EE02 S-81 D004

ANALYTICAL
RESULTS
mg/kg

Anthracene	< 1.5
Di-n-butyl Phthalate	< 1.5
Fluoranthene	< 1.5
Pyrene	< 1.5
Butyl Benzyl Phthalate	< 1.5
Benzo(a)anthracene	< 1.5
Chrysene	< 1.5
Bis(2-Ethylhexyl) Phthalate	< 1.5
Di-n-octyl Phthalate	< 1.5
Benzo(b)fluoranthene	< 1.5
Benzo(k)fluoranthene	< 1.5
Benzo(a)pyrene	< 1.5
3,3'-Dichlorobenzidine	< 3.0
Indeno(1,2,3-cd)pyrene	< 1.5
Dibenzo(a,h)anthracene	< 1.5
Benzo(ghi)perylene	< 1.5

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LAB# 1090528 PROJECT #91EE02 S-82 D005

ANALYTICAL
RESULTS
mg/kg

METALS 13 CPDS

Antimony, Total	0.36
Arsenic, Total	6.3
Beryllium, Total	0.60
Cadmium, Total	1.0
Chromium, Total	3.8
Copper, Total	< 1.0
Lead, Total	28
Mercury, Total	< 0.05
Nickel, Total	14
Selenium, Total	0.37
Silver, Total	< 1.5
Thallium, Total	20
Zinc, Total	200

8240 VOLATILES, GC/MS

Chloromethane	< 0.010
Bromomethane	< 0.010
Vinyl Chloride	< 0.010
Chloroethane	< 0.010
Methylene Chloride	< 0.010
Acetone	1.1
Carbon Disulfide	< 0.010
1,1-Dichloroethene	< 0.010

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	mg/kg
Total Arsenic	6.3
" Cadmium	1.0
" Chromium	3.8
" Lead	28
" Nickel	14
" Thallium	20
" Zinc	200
Acetone	1.1

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LAB# 1090528 PROJECT #91EE02 S-82 D005

ANALYTICAL
RESULTS
mg/kg

1,1-Dichloroethane	< 0.010
trans-1,2-Dichloroethene	< 0.010
Chloroform	< 0.010
1,2-Dichloroethane	< 0.010
2-Butanone	< 0.10
1,1,1-Trichloroethane	< 0.010
Carbon Tetrachloride	< 0.010
Bromodichloromethane	< 0.010
1,2-Dichloropropane	< 0.010
trans-1,3-Dichloropropene	< 0.010
Trichloroethene	< 0.010
Dibromochloromethane	< 0.010
1,1,2-Trichloroethane	< 0.010
Benzene	< 0.010
cis-1,3-Dichloropropene	< 0.010
Bromoform	< 0.010
2-Hexanone	< 0.050
4-Methyl-2-Pentanone	< 0.050
Tetrachloroethene	< 0.010
1,1,2,2-Tetrachloroethane	< 0.010
Toluene	< 0.010
Chlorobenzene	< 0.010
Ethylbenzene	< 0.010

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LAB# 1090528 PROJECT #91EE02 S-82 D005

ANALYTICAL
RESULTS
mg/kg

Styrene	< 0.010
mp-Xylene	< 0.010
o-Xylene	< 0.010
cis-1,2-Dichloroethene	< 0.010
1,2-Dichlorobenzene	< 0.010
1,3-Dichlorobenzene	< 0.010
1,4-Dichlorobenzene	< 0.010
8270 SEMI-VOLATILES, GC/MS	
N-Nitrosodimethylamine	< 0.50
Phenol	< 0.50
Aniline	< 1.0
Bis(2-Chloroethyl) Ether	< 0.50
2-Chlorophenol	< 0.50
1,3-Dichlorobenzene	< 0.50
1,4-Dichlorobenzene	< 0.50
Benzyl Alcohol	< 1.0
1,2-Dichlorobenzene	< 0.50
2-Methylphenol	< 0.50
Bis(2-Chloroisopropyl) Ether	< 0.50
4-Methylphenol	< 0.50
N-Nitroso-Di-N-Propylamine	< 0.50
Hexachloroethane	< 0.50
Nitrobenzene	< 0.50

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LAB# 1090528 PROJECT #91EE02 S-82 D005

ANALYTICAL
RESULTS
mg/kg

Isophorone	< 0.50
2-Nitrophenol	< 0.50
2,4-Dimethylphenol	< 0.50
Bis(2-Chloroethoxy) Methane	< 0.50
Benzoic Acid	< 0.50
2,4-Dichlorophenol	< 0.50
1,2,4-Trichlorobenzene	< 0.50
Naphthalene	< 0.50
4-Chloroaniline	< 1.0
Hexachlorobutadiene	< 0.50
4-Chloro-3-Methylphenol	< 1.0
2-Methylnaphthalene	< 0.50
Hexachlorocyclopentadiene	< 0.50
2,4,6-Trichlorophenol	< 0.50
2,4,5-Trichlorophenol	< 0.50
2-Chloronaphthalene	< 0.50
2-Nitroaniline	< 3.0
Dimethyl Phthalate	< 0.50
2,6-Dinitrotoluene	< 0.50
Acenaphthylene	< 0.50
3-Nitroaniline	< 3.0
Acenaphthene	< 0.50
2,4-Dinitrophenol	< 1.0

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LAB# 1090528 PROJECT #91EE02 S-82 D005

ANALYTICAL
RESULTS
mg/kg

4-Nitrophenol	< 1.0
Dibenzofuran	< 0.50
2,4-Dinitrotoluene	< 0.50
Diethyl Phthalate	< 0.50
Fluorene	< 0.50
4-Nitroaniline	< 3.0
2-Methyl-4,6-Dinitrophenol	< 1.0
N-Nitrosodiphenylamine	< 0.50
Azobenzene	< 0.50
4-Bromophenyl Phenyl Ether	< 0.50
Hexachlorobenzene	< 0.50
Pentachlorophenol	< 0.50
Phenanthrene	< 0.50
Anthracene	< 0.50
Di-n-butyl Phthalate	< 0.50
Fluoranthene	< 0.50
Pyrene	< 0.50
Butyl Benzyl Phthalate	< 0.50
Benzo(a)anthracene	< 0.50
Chrysene	< 0.50
Bis(2-Ethylhexyl) Phthalate	< 0.50
Di-n-octyl Phthalate	< 0.50
Benzo(b)fluoranthene	< 0.50

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LAB# 1090528 PROJECT #91EE02 S-82 D005

ANALYTICAL
RESULTS
mg/kg

Benzo(k) fluoranthene	< 0.50
Benzo(a)pyrene	< 0.50
3,3'-Dichlorobenzidine	< 1.0
Indeno(1,2,3-cd)pyrene	< 0.50
Dibenzo(a,h)anthracene	< 0.50
Benzo(ghi)perylene	< 0.50

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LAB# 1090529 PROJECT #91EE02 S-83 S001

ANALYTICAL
RESULTS
mg/kg

METALS 13 CPDS

Antimony, Total	0.36
Arsenic, Total	8.4
Beryllium, Total	0.90
Cadmium, Total	3.5
Chromium, Total	510
Copper, Total	58
Lead, Total	190
Mercury, Total	< 0.06
Nickel, Total	34
Selenium, Total	< 0.10
Silver, Total	4.5
Thallium, Total	150
Zinc, Total	190

S-83

	mg/kg
Total Arsenic	8.4
Cadmium	3.5
Chromium	510
Copper	58
Lead	190
Nickel	34
Silver	4.5
Thallium	150
Zinc	190
Acetone	2.4

8240 VOLATILES, GC/MS

Chloromethane	< 0.010
Bromomethane	< 0.010
Vinyl Chloride	< 0.010
Chloroethane	< 0.010
Methylene Chloride	0.16
Acetone	2.4
Carbon Disulfide	< 0.010
1,1-Dichloroethene	< 0.010

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LAB# 1090529 PROJECT #91EE02 S-83 S001

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ANALYTICAL
RESULTS
mg/kg

1,1-Dichloroethane	< 0.010
trans-1,2-Dichloroethene	< 0.010
Chloroform	< 0.010
1,2-Dichloroethane	< 0.010
2-Butanone	< 0.10
1,1,1-Trichloroethane	< 0.010
Carbon Tetrachloride	< 0.010
Bromodichloromethane	< 0.010
1,2-Dichloropropane	< 0.010
trans-1,3-Dichloropropene	< 0.010
Trichloroethene	< 0.010
Dibromochloromethane	< 0.010
1,1,2-Trichloroethane	< 0.010
Benzene	< 0.010
cis-1,3-Dichloropropene	< 0.010
Bromoform	< 0.010
2-Hexanone	< 0.050
4-Methyl-2-Pentanone	< 0.050
Tetrachloroethene	< 0.010
1,1,2,2-Tetrachloroethane	0.012
Toluene	< 0.010
Chlorobenzene	< 0.010
Ethylbenzene	< 0.010

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LAB# 1090529 PROJECT #91EE02 S-83 S001

ANALYTICAL
RESULTS
mg/kg

Styrene < 0.010

mp-Xylene < 0.010

o-Xylene < 0.010

cis-1,2-Dichloroethene < 0.010

1,2-Dichlorobenzene < 0.010

1,3-Dichlorobenzene < 0.010

1,4-Dichlorobenzene < 0.010

8270 SEMI-VOLATILES, GC/MS

N-Nitrosodimethylamine

Phenol < 0.50

Aniline < 1.0

Bis(2-Chloroethyl) Ether < 0.50

2-Chlorophenol < 0.50

1,3-Dichlorobenzene < 0.50

1,4-Dichlorobenzene < 0.50

Benzyl Alcohol < 1.0

1,2-Dichlorobenzene < 0.50

2-Methylphenol < 0.50

Bis(2-Chloroisopropyl) Ether < 0.50

4-Methylphenol < 0.50

N-Nitroso-Di-N-Propylamine < 0.50

Hexachloroethane < 0.50

Nitrobenzene < 0.50

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LAB# 1090529 PROJECT #91EE02 S-83 S001

ANALYTICAL
RESULTS
mg/kg

Isophorone	< 0.50
2-Nitrophenol	< 0.50
2,4-Dimethylphenol	< 0.50
Bis(2-Chloroethoxy) Methane	< 0.50
Benzoic Acid	< 1.0
2,4-Dichlorophenol	< 0.50
1,2,4-Trichlorobenzene	< 0.50
Naphthalene	< 0.50
4-Chloroaniline	< 1.0
Hexachlorobutadiene	< 0.50
4-Chloro-3-Methylphenol	< 1.0
2-Methylnapthalene	< 0.50
Hexachlorocyclopentadiene	< 0.50
2,6-Trichlorophenol	< 0.50
2,4,5-Trichlorophenol	< 0.50
2-Chloronaphthalene	< 0.50
2-Nitroaniline	< 3.0
Dimethyl Phthalate	< 0.50
2,6-Dinitrotoluene	< 0.50
Acenaphthylene	< 0.50
3-Nitroaniline	< 3.0
Acenaphthene	< 0.50
2,4-Dinitrophenol	< 1.0

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LAB# 1090529 PROJECT #91EE02 S-83 S001

ANALYTICAL
RESULTS
mg/kg

4-Nitrophenol	< 1.0
Dibenzofuran	< 0.50
2,4-Dinitrotoluene	< 0.50
Diethyl Phthalate	< 0.50
Fluorene	< 0.50
4-Nitroaniline	< 3.0
2-Methyl-4,6-Dinitrophenol	< 1.0
N-Nitrosodiphenylamine	< 0.50
Azobenzene	< 0.50
4-Bromophenyl Phenyl Ether	< 0.50
Hexachlorobenzene	< 0.50
Pentachlorophenol	< 1.0
Phenanthrene	< 0.50
Acenaphthene	< 0.50
Di-n-butyl Phthalate	< 0.50
Fluoranthene	< 0.50
Pyrene	0.52
Butyl Benzyl Phthalate	< 0.50
Benzo(a)anthracene	< 0.50
Chrysene	0.71
Bis(2-Ethylhexyl) Phthalate	< 0.50
Di-n-octyl Phthalate	< 0.50
Benzo(b)fluoranthene	< 0.50

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LAB# 1090529 PROJECT #91EE02 S-83 S001

ANALYTICAL
RESULTS
mg/kg

Benzo(k)fluoranthene	< 0.50
Benzo(a)pyrene	< 0.50
3,3'-Dichlorobenzidine	< 1.0
Indeno(1,2,3-cd)pyrene	< 0.50
Dibenzo(a,h)anthracene	< 0.50
Benzo(ghi)perylene	< 0.50

PESTICIDES

alpha-BHC	< 0.03
beta-BHC	< 0.08
gamma-BHC (Lindane)	< 0.03
Heptachlor	< 0.03
delta-BHC	< 0.20
Aldrin	< 0.08
Heptachlor Epoxide	< 0.02
alpha-Endosulfan	< 0.03
4,4'-DDE	< 0.02
Dieldrin	< 0.02
Endrin	< 0.03
4,4'-DDD	< 0.03
beta-Endosulfan	< 0.02
4,4'-DDT	< 0.03
Endrin Aldehyde	< 0.10
Endosulfan Sulfate	< 0.10

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LAB# 1090529 PROJECT #91EE02 S-83 S001

ANALYTICAL
RESULTS
mg/kg

Chlordane < 0.2

Toxaphene < 2.0

HERBICIDES

2,4-D < 0.03

2,4,5-TP (Silvex) < 0.01

PCB'S BY AROCHLOR

PCB-1016 < 1.0

PCB-1221 < 1.0

PCB-1232 < 1.0

PCB-1242 < 1.0

PCB-1248 < 1.0

PCB-1254 < 1.0

PCB-1260 < 1.0

PCB-1262 < 1.0

PCB, Total < 1.0

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LAB# 1090530 PROJECT #91EE02 S-84 S002

ANALYTICAL
RESULTS
mg/kg

METALS 13 CPDS

Antimony, Total	0.22
Arsenic, Total	7.6
Beryllium, Total	< 0.50
Cadmium, Total	1.3
Chromium, Total	19
Copper, Total	40
Lead, Total	120
Mercury, Total	< 0.05
Nickel, Total	20
Selenium, Total	< 0.10
Silver, Total	< 1.5
Thallium, Total	28
Zinc, Total	220

8240 VOLATILES, GC/MS

Chloromethane	< 0.010
Bromomethane	< 0.010
Vinyl Chloride	< 0.010
Chloroethane	< 0.010
Methylene Chloride	0.16
Acetone	2.0
Carbon Disulfide	0.030
1,1-Dichloroethene	< 0.010

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LAB# 1090530 PROJECT #91EE02 S-84 S002

ANALYTICAL
RESULTS
mg/kg

1,1-Dichloroethane	< 0.010
trans-1,2-Dichloroethene	< 0.010
Chloroform	< 0.010
1,2-Dichloroethane	< 0.010
2-Butanone	< 0.10
1,1,1-Trichloroethane	0.17
Carbon Tetrachloride	< 0.010
Bromodichloromethane	< 0.010
1,2-Dichloropropane	< 0.010
trans-1,3-Dichloropropene	< 0.010
Trichloroethene	0.064
Dibromochloromethane	< 0.010
1,1,2-Trichloroethane	< 0.010
Benzene	0.045
cis-1,3-Dichloropropene	< 0.010
Bromoform	< 0.010
2-Hexanone	< 0.050
4-Methyl-2-Pentanone	0.24
Tetrachloroethene	0.024
1,1,2,2-Tetrachloroethane	< 0.010
Toluene	0.18
Chlorobenzene	< 0.010
Ethylbenzene	0.021

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LAB# 1090530 PROJECT #91EE02 S-84 S002

ANALYTICAL
RESULTS
mg/kg

Styrene	< 0.010
mp-Xylene	0.045
o-Xylene	0.080
cis-1,2-Dichloroethene	< 0.010
1,2-Dichlorobenzene	< 0.010
1,3-Dichlorobenzene	< 0.010
1,4-Dichlorobenzene	< 0.010
8270 SEMI-VOLATILES, GC/MS	
N-Nitrosodimethylamine	< 0.50
Phenol	< 0.50
Aniline	< 1.0
Bis(2-Chloroethyl) Ether	< 0.50
2-Chlorophenol	< 0.50
1,3-Dichlorobenzene	< 0.50
1,4-Dichlorobenzene	< 0.50
Benzyl Alcohol	< 1.0
1,2-Dichlorobenzene	< 0.50
2-Methylphenol	< 0.50
Bis(2-Chloroisopropyl) Ether	< 0.50
4-Methylphenol	< 0.50
N-Nitroso-Di-N-Propylamine	< 0.50
Hexachloroethane	< 0.50
Nitrobenzene	< 0.50

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LAB# 1090530 PROJECT #91EE02 S-84 S002

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ANALYTICAL
RESULTS
mg/kg

Isophorone	< 0.50
2-Nitrophenol	< 0.50
2,4-Dimethylphenol	< 0.50
Bis(2-Chloroethoxy) Methane	< 0.50
Benzoic Acid	< 1.0
2,4-Dichlorophenol	< 0.50
1,2,4-Trichlorobenzene	< 0.50
Naphthalene	0.62
4-Chloroaniline	< 1.0
Hexachlorobutadiene	< 0.50
4-Chloro-3-Methylphenol	< 1.0
2-Methylnaphthalene	2.9
Hexachlorocyclopentadiene	< 0.50
2,6-Trichlorophenol	< 0.50
2,4,5-Trichlorophenol	< 0.50
2-Chloronaphthalene	< 0.50
2-Nitroaniline	< 3.0
Dimethyl Phthalate	< 0.50
2,6-Dinitrotoluene	< 0.50
Acenaphthylene	< 0.50
3-Nitroaniline	< 3.0
Acenaphthene	< 0.50
2,4-Dinitrophenol	< 1.0

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LAB# 1090530 PROJECT #91EE02 S-84 S002

ANALYTICAL
RESULTS
mg/kg

4-Nitrophenol	< 1.0
Dibenzofuran	< 0.50
2,4-Dinitrotoluene	< 0.50
Diethyl Phthalate	< 0.50
Fluorene	< 0.50
4-Nitroaniline	< 3.0
2-Methyl-4,6-Dinitrophenol	< 1.0
N-Nitrosodiphenylamine	< 0.50
Azobenzene	< 0.50
4-Bromophenyl Phenyl Ether	< 0.50
Hexachlorobenzene	< 0.50
Pentachlorophenol	< 1.0
Phenanthrene	2.3
Anthracene	< 0.50
Di-n-butyl Phthalate	< 0.50
Fluoranthene	< 0.50
Pyrene	0.95
Butyl Benzyl Phthalate	0.60
Benzo(a)anthracene	< 0.50
Chrysene	< 0.50
Bis(2-Ethylhexyl) Phthalate	< 0.50
Di-n-octyl Phthalate	< 0.50
Benzo(b)fluoranthene	< 0.50

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LAB# 1090530 PROJECT #91EE02 S-84 S002

ANALYTICAL
RESULTS
mg/kg

Benzo(k)fluoranthene	< 0.50
Benzo(a)pyrene	< 0.50
3,3'-Dichlorobenzidine	< 1.0
Indeno(1,2,3-cd)pyrene	< 0.50
Dibenzo(a,h)anthracene	< 0.50
Benzo(ghi)perylene	< 0.50

PESTICIDES

alpha-BHC	< 0.10
beta-BHC	< 0.10
gamma-BHC (Lindane)	< 0.20
Heptachlor	< 0.30
delta-BHC	< 0.10
Aldrin	< 0.06
Heptachlor Epoxide	< 0.06
alpha-Endosulfan	< 0.20
4,4'-DDE	< 0.20
Dieldrin	< 0.20
Endrin	< 0.20
4,4'-DDD	< 0.20
beta-Endosulfan	< 0.20
4,4'-DDT	< 0.30
Endrin Aldehyde	< 0.05
Endosulfan Sulfate	< 0.05

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LAB# 1090530 PROJECT #91EE02 S-84 S002

ANALYTICAL
RESULTS
mg/kg

Chlordane < 0.4

Toxaphene < 4.0

HERBICIDES

2,4-D 0.36

2,4,5-TP (Silvex) < 0.05

PCB'S BY AROCHLOR

PCB-1016 < 1.0

PCB-1221 < 1.0

PCB-1232 < 1.0

PCB-1242 < 1.0

PCB-1248 < 1.0

PCB-1254 < 1.0

PCB-1260 < 1.0

PCB-1262 < 1.0

PCB, Total < 1.0

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LAB# 1090531 PROJECT #91EE02 S-85 010-SOLID

ANALYTICAL
RESULTS

ASBESTOS GROUP

Asbestos, Chrysotile % 45

Asbestos, Chrysolite, % 3

DRAFT

MEMORANDUM

DATE: October 18, 1991
TO: Bill Wilde, Project Manager, E & E, Detroit, IL
THRU: Brenda Jones, TAT-Chemist, E & E, Chicago, IL
SUBJ: Data Quality Assurance Review, Enterprise Oil

REF: Analytical TDD: T05-9109-812 Project TDD: T05-9108-017
Analytical PAN: EMI1259ACA Project PAN: EMI1259SAA

The data quality assurance review of three samples collected from the Enterprise Oil site, has been completed. Analysis for total organic halide (TOX), as Cl, and total chlorine (U.S. EPA methods) was performed by Canton Analytical Laboratory, Inc., Plymouth, Michigan.

The three samples were numbered: S-178 through S180

Data Qualifications:

I Holding Time: Acceptable

The samples were analyzed within 48 hours of receipt by the lab.

II General Comments

Two of the three samples had TOX results that were less than the total chlorine results. This could be due to the following reasons:

1. TOX measures only organic halides while the total chlorine test measures both organic and mineral chlorine.
2. The samples may not have been adequately homogenized prior to taking aliquots for analysis.
3. Method error associated with each method is unmeasurable, but could contribute to the differences

No action is taken by the reviewer because this is QA level I data, and these results are acceptable at this QA level.

III Overall Assessment of the Data for Use

The overall usefulness of the data is based on the criteria outlined in "Quality Assurance/Quality Control Guidance for Removal Activities" (April 1990). Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

CAL

DRAFT

Canton Analytical Laboratory, Inc.
ENVIRONMENTAL ANALYSIS

October 03, 1991

ECOLOGY & ENVIRONMENT, INC.
12251 Universal
Taylor, MI 48180

ATTENTION: Ms. Andrea Thompson

RE: CAL Report #15064
3 samples delivered 09/25/91

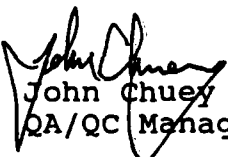
Dear Ms. Thompson:

The samples we received from you have been analyzed as requested. The results are compiled in the enclosed report.

It is a pleasure to be of assistance to you. Please contact us if you have questions concerning any aspect of this work.

Very truly yours,

CANTON ANALYTICAL LABORATORY, INC.


John Chuey
QA/QC Manager

JC/wh

RECEIVED

OCT 10 1991

TAT MI-SAT

DRAFT

ECOLOGY AND ENVIRONMENT, INC.
CAL REPORT# 15064

PAGE 1

SAMPLE RECEIVED 09/25/91

LAB# 1091535 PROJECT #91EE01 S-178 DITCH NORTH OF RAILROAD TRACK

ANALYTICAL
RESULTS
mg/kg

Total Org. Halide, as Cl 3300

Chlorine, Total 4500

DRAFT

ECOLOGY AND ENVIRONMENT, INC.
CAL REPORT# 15064

SAMPLE RECEIVED 09/25/91

PAGE 2

LAB# 1091536 PROJECT #91EE01 S-179 NORTH SIDE OF 250K CONTAINMENT AREA

=====

ANALYTICAL
RESULTS
mg/kg

Total Org. Halide, as Cl 5200

Chlorine, Total 6900

DRAFT

ECOLOGY AND ENVIRONMENT, INC.
CAL REPORT# 15064

SAMPLE RECEIVED 09/25/91

PAGE 3

LAB# 1091537 PROJECT #91EE01 S-180 SOUTHSIDE OF 250K CONTAINMENT AREA

ANALYTICAL
RESULTS
mg/kg

Total Org. Halide, as Cl 2800

Chlorine, Total 1800

Q A / Q C C O M P I L A T I O N S

[illegible]

DRAFT

$$*\% \text{ of SPIKE RECOVERED} = [(\text{OBSERVED CONC. of SPIKE SAMPLE} - \text{MEAN}) / (\text{FINAL SPIKE CONC.})] \times 100\%$$

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TOX Total</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">ORGANIC HALOGENS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Chlorine</div> </div>										REMARKS	
PROJ. NO.		PROJECT NAME															
91E501		Enterprise Oil Detroit TAT														<div style="font-size: 2em; font-weight: bold;">DRAFT</div>	
SAMPLERS: (Signature) William Wilder																	
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	Tag #s											
S-178	9/25	1015		X	Ditch North of Rail Road Track/Liquid	2x40ml	X	X									5-197463
S-179	9/25	1025		X	North side of 250k Containment Area	2x40ml	X	X									5-197465
S-180	9/25	1035		X	South side of 250k Cont. Area	20x40ml	X	X									5-197464
<p>Total Cost \$480.00 per B. Jone 9-25-91</p> <p>\$100.00 per TOX</p> <p>\$100.00 per Total Chlorine</p> <p>- 48 turnaround on TOX sample</p> <p>- 3 day turnaround on Total Chlorine</p> <p>- Delivered to Canton Analytical</p>																	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)		<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 0.8em;">recycled paper</div>					
William P. Wilder		9-25-91 1653		←													
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)							
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks									
				→		9-25-91 4:53pm		<p>Canton Analytical</p> <p>47801 Anchor Court</p> <p>Plymouth, MI</p> <p>(313) 459-8181</p> <p>Contact: John</p> <p>ATTN: Cherry</p>									

APPENDIX D
SAMPLE PLAN

SITE NAME: ENTERPRISE OIL TDD #: T05910B-017
SAMPLERS: D. TESIN & A. CADORIN PROJECT CODE: 2T105
LAB: _____ SAMPLE #s: S-78 thru S-85

DATE OF SAMPLING: 9-11-91

DATE SHIPPED: _____
TYPE OF LAB: _____ CRL _____ CLP _____ COMMERCIAL

GUARANTEED TURNAROUND TIME: _____

MATRIX	NO. OF SAMPLES
Soil/Sediment	<u>2</u>
Sludge	_____
Drum/Tanks	<u>5 5 5</u>
Wipes	_____
Liquids	_____
Air	_____
Other: <u>Asbestos/solid</u>	<u>1</u>

PURPOSE OF SAMPLING:

- ☐ Site Characterization
☒ Extent of Contamination
☒ Confirm Presence of Suspected Contaminant
☐ Disposal/Treatment of Materials
☐ Confirm Efficiency of Existing Treatment Systems
☐ Other: _____

ATTACHMENTS:

- ☒ Map of Sample Locations
☒ Chain-of-Custody
☒ Field Data Sheets
☒ Drum Logs (see Drum Logs)
☐ Calibration Sheets
☐ Other: _____

PLAN REVIEWED BY: _____

LIQUID SAMPLES

No. of Surface Samples 2

No. of Well Samples N/A

No. of Duplicates N/A

No. of Blanks N/A

ANALYSIS	NO. OF SAMPLES INCL. DUPS & BLANKS	NO. OF CONTAINERS PER SAMPLE	TOTAL NO. OF CONTAINER	PRESERVATIVE REQUIRED
Extractables				
(Low)		x 2 =	80 oz. amber	ice
(Medium)		x 8 =	16 oz. glass	
Volatiles				
(Low Only)		x 2 =	40 ml. glass	ice
All High Hazard Organics	<u>11</u>	x 1 =	<u>11</u> 120 ml. glass	
Dioxin				
(Low)		x 2 =	80 oz. amber	ice
Metals				
(Low)		x 1 =	1 liter HDPE	5 ml.
(Medium)		x 1 =	16 oz. glass	HNO_3
Cyanide				
(Low)		x 1 =	1 liter HDPE	5 ml.
(Medium)		x 1 =	16 oz. glass	NaOH
All High Hazard Inorganics		x 1 =	120 ml. glass	
Compatibility		x 1 =	8 oz. glass	
Disposal		x 1 =	16 oz. glass	
		x =		

TOTAL NO. OF CONTAINERS REQUIRED FOR LIQUID SAMPLES:

<u>11</u>	40 ml. glass
	8 oz. glass
	16 oz. glass
	1 l. HDPE
	80 oz. amber

No. of Surface Samples _____

No. of Composites _____

No. of Depth Samples _____

No. of Grabs _____

No. of Duplicates _____

<u>ANALYSIS</u>	<u>NO. OF SAMPLES INCL. DUPES & BLANKS</u>	<u>NO. OF CONTAINERS PER SAMPLE</u>	<u>TOTAL NO. OF CONTAINER</u>
Extractables (Low/Med)	_____	x 1	_____ 8 oz. glass
Volatiles (Low Only)	_____	x 2	_____ 120 ml. glass
All High Hazard Organics	_____	x 1	_____ 120 ml. glass
Dioxin	_____	x 1	_____ 4 oz. glass
Metals (Low/Med)	_____	x 1	_____ 8 oz. glass
Cyanide (Low)	_____	x 1	_____ 8 oz. glass
Cyanide (Med)	_____	METAL SAMPLE SUFFICES	
All High Hazard Inorganics	_____	x 1	_____ 120 ml. glass
Compatibility	_____	x 1	_____ 8 oz. glass
Disposal	_____	x 1	_____ 16 oz. glass

TOTAL NO. OF CONTAINERS REQUIRED FOR SOILS/SEDIMENTS/SLUDGES:

_____ 8 oz. glass
_____ 120 ml. glass
_____ 4 oz. glass
_____ 16 oz. glass

ICE REQUIRED AS PRESERVATIVE: _____ YES _____ NO

NO. OF
WIPE SAMPLES

NO. OF
BLANKS

TOTAL NO. OF
CONTAINERS

+

=

4 oz. glass

WETTING AGENT:

☐ Hexane
☐ Water
☐ Other

AIR SAMPLES

COMPOUNDS OR ELEMENTS SAMPLING FOR:

☐ High Volume Sampling
☐ Low Volume Sampling
_____ Gillians
_____ Other

☐ Strip Chart
_____ OVA
_____ HNU
_____ Other
☐ Other

COLLECTION MEDIA:

☐ Tube
_____ Collection
_____ Colorimetric

☐ Filter
_____ Cassette
_____ Hi-Vol
_____ Type
_____ Pore Size
☐ Other

NO. OF SAMPLE
STATIONS

NO. OF
BLANKS

TOTAL

COLLECTION MEDIA
REQUIRED

+

=

+

=

+

=

+

=

COLLECTION MEDIA IN SERIES: _____ YES _____ NO

CALIBRATION METHOD (ATTACH CALIBRATION SHEETS): _____

DRUMS/TANKS

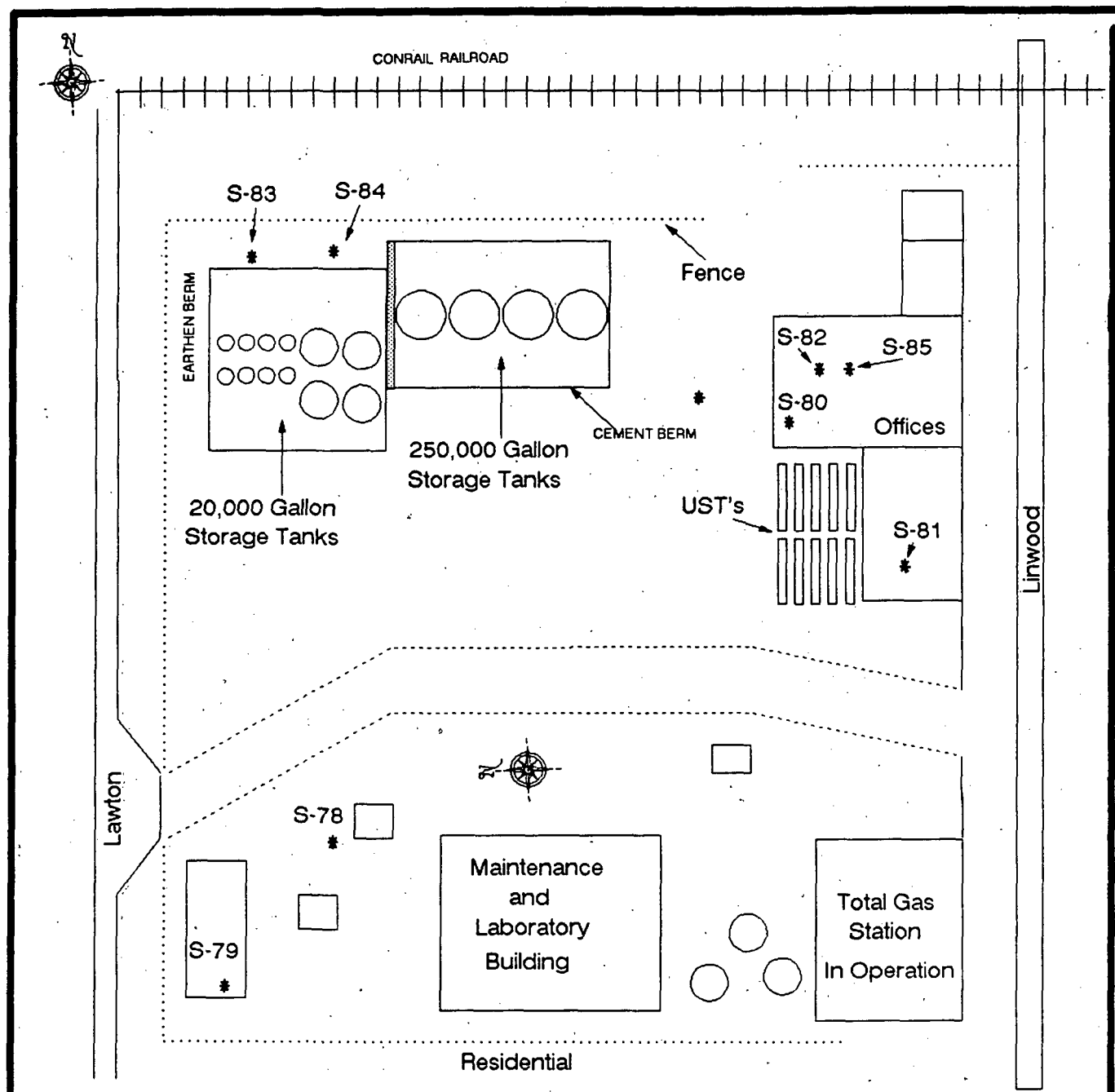
No. of Grabs 3
 No. of Composites NA
 No. of Duplicates NA

MAJORITY OF DRUM AND TANK SAMPLES WILL BE CONSIDERED HIGH HAZARD AND SHOULD BE COLLECTED AS FOLLOWS:

ANALYSIS	NO. OF SAMPLES INCL. DUPES & BLANKS	NO. OF CONTAINERS PER SAMPLE	TOTAL NO. OF CONTAINERS	
Organics	<u>3</u>	x 1	<u>3</u>	120 ml. glass
Metals & Cyanide	<u> </u>	x 1	<u> </u>	120 ml. glass
Compatibility	<u> </u>	x 1	<u> </u>	8 oz. glass
Disposal	<u> </u>	x 1	<u> </u>	16 oz. glass

Total # of 3 samples / 3 8oz container per sample and
 TOTAL NO. OF CONTAINERS REQUIRED: Total # of 2 samples at 1 8oz per container per sample

 120 ml. glass
11 ~~12~~ 8 oz. glass
 16 oz. glass



LEGEND

* = SAMPLE LOCATIONS



ecology and environment, inc.

Technical Assistance Team

Region V

TITLE

SAMPLING MAP

FIGURE #

SITE

ENTERPRISE OIL

SCALE

NONE

SOURCE/DATE

E & E, INC.\10-22-91

CITY

DETROIT

STATE

MICHIGAN

TDD #

T05-9108-017

APPENDIX E
TABLES OF SAMPLING RESULTS

TABLE 1
AIR MONITORING OF DRUM HEAD SPACE

SAMPLE #	OVA (ppm)	HNU (units)	EXPLOSI-METER/O2
Drum D001	750	440	0 % / Alarm 17%
Drum D002	15	15	0 % / Alarm 18%
Drum D003 Liquid & Sludge	< 1	1-3	0 % / 21 %
Drum D004 Clear Liquid	> 1000	Would not take	20 % / Alarm pegged
Drum D005 Black Solid Powder	None conducted	None conducted	None conducted

TABLE 2
TOTAL ORGANIC HALIDE AND TOTAL CHLORINE
ENTERPRISE OIL
DETROIT, WAYNE COUNTY, MICHIGAN

(All results reported in ppm unless otherwise noted.)

<u>Parameter</u>	<u>S-178</u>	<u>S-179</u>	<u>S-180</u>
Total Organic Halide, asCl	3300	5200	2800
Chlorine, Total	4500	6900	1800

TABLE 3
METHOD 8240/VOLATILES

All results in parts per million (ppm) unless otherwise indicated.

PARAMETER	S-78 DRUM	S-79 DRUM	S-80 DRUM	S-81 DRUM	S-82 DRUM	S-83 SOIL	S-84 SOIL
Flash point ^o	80-85			70-75			
Benzene	30						0.045
Toluene	500		0.014				0.18
Ethylbenzene	930						0.021
MP-Xylene	2,200		0.025				0.045
Methylene Chloride		2.7		1.5			0.16
Acetone		1.8	0.24	1.8	1.1	2.4	2.0
Chloroform		1.0					
2-Butanone		2.6		1.7			
4-Methyl-2-Pentanone			0.076				0.24
o-Xylene			0.019				0.080
1,1,2,2-Tetrachloroethane					0.012		
Carbon Disulfide							0.030
1,1,1-Trichloroethane							0.17
Trichloroethane						0.064	
Tetrachloroethane							0.024

Only data results above background are reported.

Source Lab: Canton Analytical Laboratory, Inc.

TABLE 4
METHOD 8270/SEMIVOLATILES

All results in parts per million (ppm) unless otherwise indicated.

PARAMETER	S-78 DRUM	S-79 DRUM	S-80 DRUM	S-81 DRUM	S-82 DRUM	S-83 SOIL	S-84 SOIL
Naphthalene	2700						0.62
2-Methylnaphthalene	1800						2.9
Dibenzoform	290						
Phenanthrene	76						2.3
Pyrene			130			0.52	0.95
Chrysene			190			0.71	
ButylBenzylPhthalate							0.60

Only data above background are reported.

Source Lab: Canton Analytical Laboratory, Inc.

TABLE 5
METALS 13 CPDS

All results in parts per million (ppm) unless otherwise indicated.

PARAMETER	S-78 DRUM	S-79 DRUM	S-80 DRUM	S-81 DRUM	S-82 DRUM	S-83 SOIL	S-84 SOIL
Arsenic, Total			0.26		6.3	8.4	7.6
Copper, Total			1.2			58	40
Antimony, Total					0.36	0.36	0.22
Beryllium, Total					0.60	0.90	
Cadmium, Total					1.0	3.5	1.3
Chromium, Total					3.8	510	19
Lead, Total					28	190	120
Nickel, Total					14	34	20
Selenium, Total					0.37		
Thallium, Total					20	150	28
Zinc, Total					200	190	220
Silver						4.5	

Only data results above background are reported.

Source Lab: Canton Analytical Laboratory, Inc.

TABLE 6
HERBICIDES

All results in ppm unless otherwise indicated.

PARAMETER	S-78 DRUM	S-79 DRUM	S-80 DRUM	S-81 DRUM	S-82 DRUM	S-83 SOIL	S-84 SOIL
2,4,D							0.36

Only data results above background are reported.

Source Lab: Canton Analytical Laboratory, Inc.